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ABSTRACT

In a self-confrontation experiment student teachers were put through an extensive test battery containing personality tests, cognitive tests, and attitude tests. An analysis is presented of the influence of personality on the student teachers' perception and evaluation during confrontation with their own video-recorded micro-lessons. Using a number of multi-variate models for data analysis, prediction problems and relations between the content of different groups of variables were studied. Results showed that student teachers' self-perception can best be predicted by personality variables that define an extroversion syndrome, social plasticity, and child centeredness. Student teachers' self-evaluation can best be predicted by means of personality variables defining a syndrome consisting of a mixture of emotionality and sensitivity variables. (Author/MV)

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EXTERNALLY MEDIATED SELF-CONFRONTATION: THE INFLUENCE OF THE PERSONALITY IN PERCEPTION AND EVALUATION OF SUBJECT-OBJECT RELATIONS

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In a self-confrontation experiment, student teachers have been put through an extensive test battery containing personality tests, cognitive tests and attitude tests. In this report an analysis is presented of the influence of personality on the student teachers' perception and evaluation during confrontation with their own video-recorded micro-lessons. Using a number of multi-variate models for data analysis, prediction problems and relations between the content of different groups of variables were studied. The student teachers' perception can best be predicted by means of personality variables that define an extroversion syndrome, social plasticity and child-centredness. The student teachers' evaluation can best be predicted by means of personality variables defining a syndrome consisting of a mixture of emotionality and sensitivity variables.

Indexed: Self-confrontation, micro-lesson, teacher training, experiment, closed circuit television, multiple regression analysis, personality assessment, perceptual development, self-evaluation.

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1. SOME PREMISSES

The theory that the most typical feature of the school of today and probably of tomorrow too, is and will be the desire to develop people's personalities, e.g. good self-knowledge, tolerance and insight into intrapersonal and interpersonal relations, is based on the following assumptions: The individual's personality consists of a number of learned "subject-object" relations. Each individual has a basic view of him"self" and this influences the individual's ability to behave in a predictable way in different situations and on different occasions. The individual's "self" is regarded as structured by changing experiences and "ego" as the personification of "self". This leads to the individual being able to see himself as an "object" built up of a large number of different experiences.

Teaching skills are to a large degree a question of how predictable a teacher's behaviour is in the contact with the pupils and the extent to which he can direct himself in building up "interactive behavioural strategies" and "interpersonal competence". For self-direction to be successful it is also necessary for the teacher to be sensitive to the development of a course of events so that he perceives it correctly. The teacher's perception and evaluation of a situation finally determine whether he has succeeded in correctly predicting the consequences of alternative behaviours.

Using closed circuit television and video-recording, we can help the teachers to see themselves from "outside" and evaluate what is presented to them. The teacher becomes his own "external observer and commentator". The role of being one's own observer and commentator can result in the teacher gaining insight into intrapersonal and interpersonal processes and first-hand experiences, which cannot be mediated via other persons.

Working on these premisses, a study will be made in this report of: "The influence of personality on the individual's perception and evaluation when confronted by his own behaviour in video-recorded situations."

The investigation of the influence of personality variables on the individual's perception and evaluation of his own video-recorded behaviours under various experimental conditions is a follow-up study of a self-confrontation experiment, which was conducted in 1968 and 1969 at the Malmö School of Education. The experiment is an attempt to modify student teachers' perception and evaluation by means of self-confrontation mediated by video-recordings (factor T) and dyadic confrontation in the form of traditional tutoring (factor H). The teaching took the form of micro-lessons. The periods video-recorded lasted 15 minutes. To improve the

precision of the design, two so called precision factors were added to the factorial plan. Factor V symbolizes the measuring instrument: assessment and evaluation schedule F III and factor A states the aspects in this instrument (perception, evaluation). Thus, the ANOVA model on which the experiment is based is A, U, T, H, I (TH), V, in which I denotes the individual factor. The model is presented in Table 1.

Table 1. The analysis of variance plan of the experiment

Index	A	U	T	H	I	V
Number of levels	2	2	2	2	24	79
Size of population	2	2	2	2	∞	79

Factor H: Traditional tutoring in which h_1: tutoring, h_2: no tutoring

Factor T: Externally mediated self-confrontation via CCTV/VR, in which t_1: self-confrontation, t_2: no self-confrontation

Factor U: Micro-lessons (length 15 min.), in which u_1: micro-lesson 1, u_2: micro-lesson 2

Factor V: Assessment and evaluation schedule F III, in which $v_1, \ldots, v_{79}$: statements of which measuring instrument consists

Factor A: Aspects of the instrument, in which a_1: perception, a_2: evaluation

Factor I: Female student teachers with A levels (the Swedish "student-examen"), term 2 at Malmö School of Education

The results of the experiment give rise to the hypothesis that the individual's personality influences the type and extent of changes in perception, evaluation and behaviour. In the earlier analyses the pattern in the F tests showed effects on factors A and U. The effects in factor A imply that the student teachers' perception (a_1) and evaluation (a_2), apart from the experimental effect seen over all the statements, are different. The effects in factor U indicate that, irrespective of the influence, the student teachers modify their perceptions and evaluations from one teaching occasion to the next (see Bierschenk, 1972, pp. 138-140). Working partly from these results, this follow-up study will investigate the way in which different personality variables are related to the student teachers' perception of micro-lesson 1 and 2, respectively, and to their evaluation of micro-lessons 1 and 2, as registered by means of the assessment and evaluation schedule F III. For this purpose a group test battery was administered in the context of the experiment.

2. PERSONALITY VARIABLES AS PREDICTORS OF SUBJECT-OBJECT RELATIONS

A survey of the literature suggests that the individual's ego is deeply involved in deciding whether and to what extent perception, evaluation or behaviours are to be changed. The individual's ego consists of many attitudes that are related to the individual's self. When a situation or event requires the expression of these attitudes, the individual becomes personally involved. Personality assessments for the purpose of describing the individual's qualities, attitudes and state of mind at a given point in time can be made in many different ways. But if we are interested in being able to compare the personality of a particular individual with that of someone else in order to discover similarities and dissimilarities in the personalities, some common base is needed for the comparisons. One usual way is to let each individual estimate the extent to which a set of personality statements gives a correct description of his own or someone else's personality.

A number of measuring instruments have been constructed, of which the assessment and evaluation schedule F III has been used as the main instrument. The purpose of this instrument was to measure the extent to which a presentation of subjective and objective information influences student teachers' perception and evaluation of their own teaching behaviours at different times. All the statements refer to "during this lesson ..." in order to associate the student teachers' reactions to the situation in question (episodic as opposed to dispositional assessments). The hypothesis as it had been formulated (Bierschenk, 1972, p. 83) was

> "that the perceptual (modification of external signs) and the emotional (modification of internal signs) defence is assumed to be followed by a focussing on cognitive and finally communicative aspects".

2.1 Choice of personality variables

The measuring instruments used consist of a selection from a test battery which was constructed for research purposes (Bjerstedt & Sundgren, 1968) and used in connection with the admittance of students to the class teacher line at Malmö School of Education. But tests not included in this test battery in 1967 and 1968 have also been used. In addition some new constructions have been included.

No detailed description of the individual tests and personality variables will be given here, however. A detailed description will be presented in another context. Research assistant Kerstin Skog-Östlin at the department of educational research, Stockholm School of Education, has participated

in the investigation of the influence of personality variables on the prediction of subject-object relations. Hereby she has worked out detailed descriptions of the variables given in Box 1. Each variable has been assigned and presented (Skog-Östlin, 1975). Also given are factor designations, the technical terms of the variables and the measuring instrument in which the variable in question is included.

Box 1. The selection of personality variables from the group test battery used in the experiment

No.	Scale	Designation				Measuring instrument
1	1				Acceptance of oneself	Schedule F VIII
	2				Acceptance of others	
3	1				Social-communicative qualities	Schedule F IX
4	2				Self-assertion	
5	3				Desire to be best and to be in the centre	
6	4				Self-reliance	
7	1	B			Suggestibility to Authority	Cattell's O-A Battery: Personal Opinions (PO)
8	2	E			Ego Weakness: shift from neurotics	
9		A			Practical Role	Stern and Masling's Teacher Preference Schedule, Form G (TPS)
10		B			Status-striving Role	
11		C			Nurturant Role	
12		D			Nondirective Role	
13		E			Critical Role	
14		F			Preadult-fixated Role	
15		G			Orderly Role	
16		H			Dependent Role	
17		I			Exhibitionistic Role	
18		J			Dominant Role	
19		A	UI	2	Affectothymia	Cattell's Sixteen Personality Factor Questionnaire, Form B (Cattell's 16 PF)
20		B	UI	2	General Intelligence (bright)	
21		C	UI	3	Ego Strength (emotional stability)	
22		E	UI	5	Dominance or Ascendance (aggressive, competitive, stubborn)	
23		F	UI	6	Surgency (enthusiastic, happy-go-lucky)	
24		G	UI	7	Super-Ego Strength (conscientious, persistent, moralistic)	
25		H	UI	8	Parmia (adventurous, socially bold)	
26		I	UI	9	Premsia (tender-minded, sensitive, dependent)	
27		L	UI	12	Protention (paranoid tendency, suspecting, jealous)	
28		M	UI	13	Autia (bohemian introvert, absentminded)	
29		N	UI	14	Shrewdness (astute)	
30		O	UI	15	Guilt Proneness (apprehensive, insecure)	
31		Q_1	UI	16	Radicalism (experimenting, analytical)	

Box 1. (Cont.)

32		Q_2	UI 17	Self-sufficiency (resourceful)
33		Q_3	UI 18	High Self-sentiment (exacting will-power)
34		Q_4	UI 19	High Ergic Tension (tense, overwrought)
35	1	Series		Cattell The Culture Fair Intelligence Test, Scale 3, Form A (Cattell's 3:A)
36	2	Classifications		
37	3	Matrices		
38	4	Conditions (Topology)		
39		Total		
40	1	Field articulation		Hidden Designs
41	1	Correction of pupils' behaviour		Severity of Judgement

The personality variables presented in Box 1 have been selected for the purpose of studying the relation between student teachers' perception and evaluation in self-confrontation processes and different personality features, namely: (1) ability to accept oneself and others, (2) ability to display social-communicative qualities, (3) ability to display integrative behaviour, (4) ability to resist changes of opinion under the influence of various types of provocation, (5) ability to maintain emotional balance, (6) possession of social behaviours, (7) ability to stimulate and control the teaching process, (8) cognitive ability, (9) ability to make perceptual analysis and (10) possession of high levels of energy and concentration. The correlations between the separate personality variables are presented in Appendix 1:1. The separate variables will be described in the cases where the variable in question proves to be important for prediction.

2.2 Description of subject-object relations

The development of the assessment and evaluation schedule F III is based on an extensive content analysis of student teachers' spontaneous oral comments to their self-confrontation experiences. Thus, the statements included in the measuring instrument reflect problem areas on which the student teachers themselves have focussed attention. The problem areas that have emerged from the student teachers' simultaneous comments during the self-confrontation process have been categorized in accordance with six a priori constructed dimensions. These dimensions are defined in the assessment and evaluation schedule F III by a total of 79 statements with seven-point bipolar assessment scales. In this analysis the dimensions consist of summation variables that can be described in the following way:

2.2.1 Ego-ego relation

The perception and evaluation concern "I-me" relations. This relation means that the same person is both subject and object. The person expresses his own actions, expectations and attitudes towards himself. The relevance of a number of statements describing the individual is assessed. The content of the statements that form this summation variable concern: (1) emotional state, (2) manner, (3) patience with pupils, (4) sense of humour, (5) voice variation, clarity of speech and vocal pitch, (6) posture, use of gestures, fiddling with objects and legibility of handwriting on blackboard, (7) factual knowledge, verbal skill and dialectal accent, (8) mental blocks and the use of rhetorical questions.

2.2.2 Ego-pupil relation

The perception and evaluation concern "I-they" relations. This relation means that the individual's actions are directed towards another person. This summation variable consists of the statements about another person, where this person is the object of the ego's actions, e.g. judgements, expectations or attitudes. Actions go from ego to pupil as (a) teacher initiatives and (b) teacher response. The content of the statements concerns: (1) explanations and descriptions, (2) support of the pupils, (3) making contact with and direction of pupils, (4) paying attention to different pupil types, (5) pupils' previous knowledge and participation in the teaching and (6) use of different questioning techniques.

2.2.3 Ego-NPO relation

The perception and evaluation concern "I-it" relations. This relation means that the individual's actions are directed towards a non-personal object in the individual's surroundings. The functional quality of non-personal objects leads to their either fitting or not fitting into the individual's plans. This summation variable is formed of the statements about various demands that can be made on an object, which in it's turn defines which possible effects can be expected. The content of these is (1) assessment of one's own teaching and the degree of the influence of the CCTV studio, (2) general and detailed planning of the lesson, (3) use of the blackboard and various teaching aids, (4) presentation of subject and communication of hard facts in the teaching, (5) linking up with pupils' initial knowledge and (6) digressions in presentation of the subject.

2.2.4 Pupil-ego relation

The perception and evaluation concern "they-me" relations. This relation implies that the individual concerned is the object of one or more persons' actions, expectations or attitudes. The statements defining this summation variable involve observations of other individuals ("centres of action"), taking into consideration that they are able to produce goal-directed actions. The content of the statements concerns: (1) obedience to student teacher's instructions, (2) contradictions by pupils, (3) pupils' questions concerning the subject and (4) the pupils give answers other than the intended ones.

2.2.5 Pupil-pupil relation

The perception and evaluation concern "they-them" relations. This relation only has indirect connections with the individual's personality. The statements that define this summation variable are to be assessed from the point of view of interactions, in which other individuals are both subject and object. The content of the statements concerns (1) the pupils' conversational discipline, (2) the pupils' conversation with each other outside the subject, (3) the pupils playing together and (4) the pupils' discussion of the subject.

2.2.6 Pupil-NPO relation

The perception and evaluation concern "they-it" relations. This relation implies that other persons as subject carry out actions involving non-personal objects. The statements defining this summation variable are to be assessed with regard to actions, expectations and attitudes towards objective factors in the individual's surroundings. The content of the statements concerns: (1) the pupils' interest in the subject, (2) the pupils' reactions to the student teachers' presentation of the subject, (3) the pupils' reactions to the subject and (4) the influence of the CCTV studio on the pupils.

The student teachers' role as "external observer-commentator" of themselves involves an "external self-distancing in time and space". An optimum external self-differentiation, i. e. a distinct separation of the individual's self from the teaching process, could mean that the assessed behaviours are correctly perceived and evaluated.

The hypothesis formulated when the experiment was planned (Bierschenk, 1972, p 83) was

"at the same rate as the individual's ability in self-distancing grows, his ability to take a more realistic or objective view increases."

Social interactions in teaching situations require that the teacher should be able to control his own behaviour in relation to real or anticipated reactions from other individuals. An effective self-control should facilitate the teacher's control of the components interacting in educational situations.

3. MULTIVARIATE DATA ANALYSES

As the discussion above has shown, we are interested in studying the relation between 41 different personality variables on the one hand and six different subject-object relations on the other. Since each group of variables contains more than two variables, multivariate analysis techniques will be used. By this means we can from a practical point of view study (1) problems of prediction, and from a theoretical point of view (2) relations between the content of two or more groups of variables. The personality variables are, for practical reasons, taken both from tests administered to the student teachers on admittance to the school of education and from tests administered after the completion of the self-confrontation experiment. It has also been considered desirable to investigate whether student teachers' assessments in the separate personality scales could be traced to the experimental variables. It is above all the following questions that have guided the design of the plan of analysis:

1. As a control measure: Are there any differences which indicate significant interactions between personality variables and the variables of the experiment?
2. To what extent if at all can the personality variables be used for prediction of the student teachers' assessments in the six subject-object relations, i. e. what is the number and content of mutually independent relations existing between the two groups of variables?
3. To what extent if at all can the personality variables successively predict the student teachers' assessments in separate subject-object relations?

3. 1 Multivariate analysis of variance

Earlier analyses of the self-confrontation experiment have mainly made use of univariate analyses of variance (ANOVA) but here data will be analyzed by means of a multivariate model for analysis of variance (MANOVA). What we wish to investigate is whether and to what extent the populations have a common distribution. Using MANOVA we can carry out tests for the following hypotheses:

H_0: The covariance matrices are equal.

H_1: The personality variables have not been influenced by the experimental factors, e.g. the equality of dispersions

H_2: The personality variables do not discriminate with regard to the experimental groups, e.g. the equality of centroids

If H_2 can be rejected it becomes possible to study the univariate F ratios that refer to separate variables. (n. B. acceptance of H_2 implies that the personality variables are without any traceable effects.) Significant F-tests state which personality variables have contributed most to the discrimination between the experimental groups (see Cooley & Lohnes, 1971, pp. 230-231).

The measuring instruments administered before and after the experiment are given in Box 2.

Box 2. Time when measuring instruments were administered

Measuring instrument		Time when administered
Schedule F VIII	(F VIII)	after the experiment
Schedule F IX	(F IX)	after the experiment
Personal Opinions	(PO)	after the experiment
Preferences in School Situations	(TPS)	after the experiment
Cattell's 16 PF	(16 PF)	after the experiment
Catteli's 3:A	(3:A)	before the experiment
Hidden Designs	(HD)	after the experiment
Severity of Judgement	(SJ)	before the experiment

Before investigating more closely the prediction value of the variables with regard to the different subject-object relations, we shall study whether the experimental influence has had any effect on the measuring instruments listed in Box 2. As a result of the restrictions in the experimental design (n = 24 per cell) and in the MANOVA program (since 41 > 24), it has been necessary to make different groups. The following groupings were made: (1) F VIII + PO + TPS; i. e. 14 variables; (2) 16 PF, i. e. 16 variables; (3) F VIII + PO + TPS + 3:A + HD + SJ, i. e. 22 variables. In this context F IX had to be excluded. This test was chosen since it is a new construction and the correlation matrice for the 41 personality variables showed that there are substantial correlations with such scales as were to be included in the analysis.

Despite the fact that it seems unlikely that data concerning intelligence variables collected before the experiment was carried out, could have been influenced by the experimental conditions, Cattell's 3:A was included. The reasons for this inclusion are that we could not dismiss (1) the problems of intercorrelated predictors and (2) the interaction between them. Furthermore the inclusion of Cattell's 3:A was based on high reliability coefficients reported in the literature and a desire to get an prediction measure equivalent to the B-factor in Cattell's 16 PF. Of course, the reader's opinion could well be, that the factors of schedule F IX would have been the more appropriate ones for several reasons: (1) the test has been administered after the experiment, (2) more information of its reliability is needed and

(3) the intercorrelations and interactions of these scales with other variables are of at least equal importance. But we have, perhaps over-cautiously, not included the latter test because of the risk for a contribution of spurious variance to the analysis. The selection was also based on the desire to have intelligence variables well-represented in the analysis.

3.2 Factorial discriminant analysis.

Factorial discriminant analysis (FACDIS) can be used to find the best linear functions for a description of the differences between the influence groups in the experiment. When we compare two or more groups with each other, it will namely not only be of interest to study whether the groups differ significantly, but it will also be important that we can examine the measuring variable vector to find the personality variable(s) that contribute(s) most to this difference. While we have been able with MANOVA to test hypotheses H_1 and H_2, we can with FACDIS study the centroids that refer to factors H and T in the self-confrontation experiment.

The results of MANOVA and FACDIS are presented in appendix 1, Table 2. In this table the results of the separate analyses are summarized. For each analysis are given the omnibus test for the variance-covariance matrices (H_1), and the omnibus test for the H-, T- and HT-effects (H_2). Wilks's generalized eta (η) which states the degree of association between the grouping and measuring variables is also presented. The power of the test battery's discrimination ability is not given but can easily be calculated since Wilks's lamda (Λ) equals $1 - \eta$ (see Cooley & Lohnes, 1971, p. 312). As is shown in appendix 1, Table 2, H_0 is, according to our expectation, accepted. No differences are proven when all personality variables are used ($\alpha \leq .01$).

The testing of H_2 shows significant differences in analyses 1 and 3, however. Since H_2 is rejected ($\alpha \leq .01$), we can henceforth examine more closely which personality variables have contributed most to the discrimination between the centroids. The univariate F ratios for analysis 1 are presented in appendix 1, Table 3. As can be seen from Table 3, the analysis shows significant effects as a result of the interaction between tutoring and self-confrontation. This means that all reliable information regarding the interaction effect is to be found in the third dimension. In order that the separate variables may be studied, the contrasts and the univariate F ratios are given in Appendix 1, Table 4. Table 4 shows that it is the variables "Suggestibility to Authority" (7) and Dependent Role (16) that have contributed significantly to the discrimination of the group centroids. It is the

student teachers who received both traditional tutoring and externally mediated self-confrontation via CCTV/VR and the student teachers who were given no influence at all (the experiment groups during spring term 1969), who deviate negativaly from the student teachers who participated in the experiment in the spring term of 1968. Positive values regarding variable 7 are interpreted as signs of a tendency to be impressionable to authority. This would mean, if any authority influence was involved, that the tutoring factor would have caused higher values than the self-confrontation factor. This is not the case, however. Instead the effect appears to have been caused by the circumstance that the experiment was carried out in two stages. In Bierschenk (1972, p. 105) possible effects of this procedure are discussed. It is said among other things that the groups participating in 1968 showed a "higher tolerance level". It can be added that in the spring term of 1969 the testings caused a considerable amount of irritation, owing to the extremely fine weather at the time. It appears to be very improbable that the student teachers participating in the experiment in 1968 should be more open to influence than those taking part in 1969. In any case there is no reason to believe that the experimental influence can have caused this effect.

The effect in the variable "Dependent Role" indicates that the student teachers who have high points on this scale try to escape from their lack of assurance by relying on superiors. The pattern in the contrast is the same as for variable 7, which means that the same interpretation can be applied, namely that it is unlikely that this effect has been caused by an experimental influence, while the hypothesis that the student teachers tested in the spring term 1968 are more dependent than those from the spring term of 1969 can be excluded entirely.

The multivariate significance tests for analyses 1 and 3 are described in Appendix 1, Tables 5 and 6. Since no significant H_2 can be established for analyses 2 and 4, the contrasts are not given. As can be seen from Table 6 (the contrasts for analysis 3) the discrimination depends on the same personality variables as those discussed in analysis 1, namely "Suggestibility to Authority" and "Dependent Role".

To sum up, the separate analyses have not shown any experimental effect on any of the personality variables studied. This result means that our next step can be to study which combination of the personality variables produces an optimum reduction of the error variance in the subject-object relations, i.e. substantially increases the squared multiple correlation 2 ($R^2 \geq .01$). This question will be studied by means of a multiple regression analysis carried out in a stepwise manner.

3.3 Multiple regression analysis - stepwise

By means of a multiple regression analysis, we can use the 41 personality variables to predict quantitatively the student teachers' assessments in the six subject-object relations. For this purpose Dixon's (1970) computer programme BMD02R has been used, which calculates a sequence of multiple linear regression equations in a stepwise manner. At each step a new variable is added to the regression equation. The variable introduced into the equation is the one leading to the greatest reduction of the error variance. The criterion used in this analysis is an F-ratio ≥ 1.00. This criterion determines whether or not a new variable should be added and if so, which one. If the removal of any one of the preexisting predictors does not lead to a significant drop in the multiple R, the predictor is eliminated. The stepwise procedure appears to be a very useful and powerful instrument in selecting a manageable number of the available personality variables for the purpose of an "adequate" prediction of the student teachers' assessments in the subject-object relations defined. The stepwise procedure combines the features of "forward selection" and "backward elimination" at each step (see Tatsuoka, 1973, p. 278).

Multiple regression analyses were carried out separately for the student teachers' perception during micro-lessons 1 and 2 respectively and for their evaluation in the same way. These four analyses have been evaluated by research assistant Kerstin Skog-Östlin who has also presented the table material for these analyses and the procedure used in evaluating the analyses.

Box 3. Ranking of personality variables for perception and evaluation according to the stepwise multiple regression analysis

Rank	Variable No.	Designation	Measuring instrument
Perception			
1	14	Preadult-fixated Role	TPS, A
2	25	Parmia	16 PF, H
3	34	High Ergic Tension	16 PF, Q_4
4.5	41	Severity of Judgement	SJ
4.5	21	Ego Strength	16 PF, C
6	4	Self-assertion	Schedule F IX
7	12	Nondirective Role	TPS, D
8	26	Premsia	16 PF, I
9	5	Desire to be best and to be in the centre	Schedule F IX
10	3	Social-communicative qualities	Schedule F IX
11	35	Series	Cattell 3:A
12	37	Matrices	Cattell 3:A
14.5	8	Ego-Weakness	PO, E
14.5	15	Orderly Role	TPS, G
14.5	23	Surgency	16 PF, F
14.5	36	Classifications	Cattell 3:A

Box 3. (Cont.)

Evaluation			
1	30	Guilt Proneness	16 PF, O
2	41	Severity of Judgement	SJ
3	37	Matrices	Cattell 3:A
4.5	28	Autia	16 PF, M
4.5	16	Dependent Role	TPS, H
6	23	Surgency	16 PF, M
7	13	Critical Role	TPS, E
9.5	6	Self-reliance	Schedule F IX
9.5	12	Nondirective Role	TPS, D
9.5	20	General Intelligence	16 PF, B
9.5	35	Series	Cattell 3:A
12.5	4	Self-assertion	Schedule F IX
12.5	25	Parmia	16 PF, H
15.5	11	Nurturant Role	TPS, C
15.5	14	Preadult-fixated Role	TPS, F
17	19	Affectothymia	16 PF, A
18	18	Dominant Role	TPS, J

The ranking in Box 3 means that the variables were weighted in relation to both the R^2 size and the number of times the variable had figured among the first 10 ranked places (cf App. 2). Thus, the stepwise multiple regression analysis has resulted in a set of personality variables that will permit an "optimal" prediction. The variables having the highest partial correlation with the criterion are included in the equation. Furthermore, the stepwise procedure examines each of the preexisting predictors for possible elimination. According to Tatsuoka (1973, p. 278) the stepwise multiple regression analysis is "the most widely understood of multivariate procedures in educational research ...". Nevertheless it may be helpful to point out that the method of analysis outlined in the following Chapter differs in one important aspect from the multiple regression analysis.

The analysis in the next Chapter is symmetric with respect to the two sets of variables. Its function is to determine a weighted linear combination of one set of variables that correlates maximally with an optimally weighted linear combination of the other set. The resulting maximum correlation is called the first canonical correlation coefficient (R_c). By means of R_c we can determine a subset of personality variables which permits the best (maximal) prediction of the student teachers' assessments of subject-object relations.

3.4 Canonical correlation analysis

The problems in this investigation, which will be studied by means of the canonical correlation analysis model, are:

1. What is the smallest number of personality features that must be controlled or extracted in order to eliminate all essential linear relations between the set of personality variables and the set of subject-object relations?

2. What qualities are represented by the personality features that have been extracted?

The number of traits that must be controlled equals the number of demonstrable canonical relations between the two sets. The purpose of a canonical correlation analysis is to find a weighted personality profile and a weighted profile of subject-object relations under the restriction of maximal correlation. Tatsuoka (1971, p. 183) states:

"Canonical analysis helps answer this [association] question by determining linear combinations of the personality scales that are most highly correlated with linear combinations of the achievement tests."

Since canonical correlations (R_c) function as summarizing measures and are thus not suited to more detailed analysis, the following analysis will be based on Stewart & Love's (1968, pp. 160-163) index for the determination of the redundancy in the first set of variables, given another set of variables, i. e.. similarity between both sets. According to Stewart & Love (1968, p. 162)

"the proportion of redundant variance associated with a given root is instructive in determing whether the root deserves interpretation and further attention . . ."

By using Stewart & Love's index we gain increased possibilities in the interpretation of canonical correlation analyses. We can study:

1. how many dimensions are necessary if we are to be able to extract an essential part of asymmetrical variance

2. how great a part of the common variance refers to the first, second, third etc dimension and

3. the part of variance (proportion of trace) of a set of predictor and criteria variables respectively that is predictable.

But most important to the following analysis is Cooley & Lohnes (1971, p. 171) statement:

"Before we had the new coefficient of redundancy we were prone to look at R_c^2 as a measure of the overlap between the two batteries. Actually, it is only a measure of the overlap between the two canonical variates x and y, and these may or may not be important factors of their respective batteries."

But if one wishes to draw conclusions about the minimum number of canonical relations known to exist in the population, a test of significance be-

comes necessary. The fact that high canonical correlation may be found despite low redundancy values (see Cooley & Lohnes, 1971, p. 181) indicates that practically no overlap exists between the two sets of variables. Therefore in our discussion we will not discriminate between significant and non-significant relations.

3.4.1 Perception of subject-object relations

Tables 2-9 give the canonical correlations, significance values, redundancy index and component structures. After this analysis the canonical loadings are studied in more detail. As in all the earlier analyses within the project "Self-confrontation in teacher training", the criterion used is $r \geq .30$. The variables that attain this value are considered to contribute substantially to the maximally correlated dimensions. In Table 2 the summarized measurements for the student teachers' perception during micro-lesson 1 are given.

Table 2. Canonical correlation between personality variables and subject-object relations: χ^2-test and redundancy index:

Roots	R_c	R_c^2	Observed χ^2 value	df	Λ	$z_{.99} = 2.31$
1	.64	.41	110.10	96	.240	1.61
2	.49	.24	75.57	75	.415	
3	.44	.19	52.41	56	.534	
4	.41	.16	34.53	39	.661	
5	.36	.13	19.53	24	.791	
6	.30	.09	7.91	11	.910	

Wilks Λ = .240

Personality variables				Subject-object relations		
	V_p	R_{dp}	R_t	V_c	R_{dc}	R_t
1	.07	.03	.38	.33	.13	.52
2	.08	.02	.25	.11	.03	.12
3	.06	.01	.13	.28	.05	.20
4	.07	.01	.13	.08	.01	.04
5	.06	.01	.13	.11	.01	.04
6	.04	.00	.00	.09	.01	.04
	.38	.08	1.00	1.00	.25	1.00

R_c: Canonical correlation

R_c^2: Squared canonical correlation

V_c: Extracted variance from the set of criteria variables

V_p: Variance extracted from the set of predictor variables

R_{dc}: Redundancy index for the prediction of the subject-object relations when the assessments of personality variables are known

R_{dp}: Redundancy index for the prediction of the personality variables when the assessments of the subject-object relations are known

R_t: Proportion of the total redundant variance

As can be seen from Table 2, no significant correlated canonical dimension can be shown for the student teachers' perception during micro-lesson 1. The six canonical dimensions extract 38% of the variance in the set of personality variables. In both sets of variables it is the first three roots that are responsible for $\geq 10\%$ of the total redundant variance. When the student teachers' assessment in the personality variables is known, it is possible to state at the same time 25% of the variance in the subject-object relations, i. e. 25% redundant or overlapping variance exists. In addition the correlation (R_c) is relatively much higher than any of the correlations between the original variables (see App. 1:1). But we are unable to add anything to the statement that there are correlated canonical dimensions (significant or not). Only examination of the canonical components can make it possible to describe and interpret the three dimensions that are at the same time responsible for $R_t \geq .10$.

Table 3 presents the observed correlations between the original variables in a group of variables and a canonical vector in the respective groups, i. e. "canonical loadings". Darlington & Weinberg (1973, p. 444) state that

"the observed correlations between original variables in a set and a canonical variable in that set is a measure of the relative size of the correlations of those variables with the unobserved trait which the canonical variate predicts."

Thus, the canonical correlation indicates how well the nature of a trait can be inferred. A closer examination of the component structure in Table 3 shows that personality variables Nos. 3, 25 and 34 correlate positively with the first predictor vector, while variable No. 36 correlates negatively. The comparatively highest correlation with the first criterion vector is to be found in the pupil-ego relation. But the other relations, with the exception of the pupil-NPO relation, also show substantial correlations.

The personality features that are important for the student teachers' perception during micro-lesson 1 will be described in more detail:

Table 3. Canonical component structure. Micro-lesson 1: Perception

Variable No.	Designation	Component 1	2	3
Personality variables				
14	Preadult-fixated Role	.13	.37	.07
25	Parmia	.42	-.07	-.10
34	High Ergic Tension	.32	.36	-.21
41	Severity of Judgement	.27	-.11	-.24
21	Ego Strength	.24	-.57	.04
4	Self-assertion	-.22	.26	-.39
12	Nondirective Role	-.09	-.08	.09
26	Premsia	-.24	-.44	-.17
5	Desire to be best and to be in the centre	-.05	-.53	-.16

Table 3. (cont.)

3	Social-communicative qualities	.57	-.04	.11
35	Series	.15	.30	-.42
37	Matrices	-.06	.00	-.17
8	Ego Weakness	.20	.14	.31
15	Orderly Role	-.18	-.02	.49
23	Surgency	.00	.10	-.17
36	Classifications	-.37	.02	.12
Subject-object relations				
1	Ego-ego relation	.50	-.45	.26
2	Ego-pupil relation	.43	-.01	.70
3	Ego-NPO relation	.58	.05	.61
4	Pupil-ego relation	.95	.09	.05
5	Pupil-pupil relation	.48	.67	.28
6	Pupil-NPO relation	.27	.04	.80

Social-communicative qualities towards known and unknown groups of various kinds are based on self-confidence, authority and verbal ability. The individual is confronted with problems in concretely described situations such as (1) having a pronounced opinion, (2) stating one's opinion, (3) maintaining a train of thought, (4) mastering distractions, (5) presenting a subject, (6) being verbally receptive. High values indicate that the individual believes that it would be easy to master the problems described. The factor correlates (r = +41) with Cattell's "Parmia" and can be described as a factor belonging to the extroversion syndrome. The factor measures the polarity "ego-environment".

Parmia characterizes individuals who (1) demonstrate an uninhibited social behaviour as a consequence of a lack of shyness, (2) are inhibited very little by dangers and demands in their environment, (3) actively seek contact with others, (4) find it easy to talk to others. This lack of receptiveness to inhibitions is assumed to be largely constitutional.

High Ergic Tension characterizes individuals with changeable moods and heightened emotional tension. They are e.g. easily irritated, restless, feel tense and get easily upset. This factor expresses temporary emotional reactions to situations.

Classifications measure the individual's ability in deductive reasoning. This test loads on "Fluid General Intelligence", which is a second order factor (see Pawlik, 1968, pp. 358-359). The test is intended to measure the "g" factor (general ability factor). But this sub-test is also to some extent dependent on upbringing and education.

To sum up, the student teachers' perception in the first lesson can be predicted maximally by personality features that define the dimension "introversion-extroversion". The student teachers who present an open attitude to their environment, who seek intensive contact with their environment and who find it easy to talk to others are positive in their perception of the pupil-ego relation. But temporary emotional reactions to situations and the student teachers' deductive ability are also important for the prediction of the "they-me" relation, i.e. the student teachers' perception of the pupils' actions, expectations or attitudes towards themselves, defined by the statements dealing with obedience to student teachers' instructions or contradictions from pupils.

The other canonical component shows that personality variables No. 34 and 35 correlate positively with the predictor vector, while Nos. 21, 25 and 26 correlate negatively. The pupil-pupil relation has the highest correlation with the criterion vector. Regarding the third canonical component, Table 3 shows that variable No. 15 correlates positively with the predictor vector, while Nos. 4 and 35 show negative correlations. Relations 6, 2 and 3 correlate relatively highly with the criterion vector. The implications of these two components will not be further discussed, however.

The canonical correlation analysis of the student teachers' perception during micro-lesson 2 is presented in Table 4.

Table 4. Canonical correlations between personality variables and subject-object relations: χ^2 test and redundancy index

Roots	R_c	R_c^2	Observed χ^2 value	df	Λ	$z_{.99} = 2.31$
1	.68	.47	153.88	96	.158	3.72
2	.64	.41	101.32	75	.297	2.03
3	.50	.25	56.89	56	.506	
4	.43	.18	33.00	39	.674	
5	.36	.13	16.25	24	.823	
6	.24	.06	4.84	11	.944	

Wilks's Λ = .158

Personality variables				Subject-object-relations		
	V_p	R_{dp}	R_t	V_c	R_c	R_t
1	.07	.03	.30	.19	.09	.35
2	.07	.03	.30	.15	.06	.23
3	.05	.01	.10	.08	.02	.08
4	.08	.01	.10	.37	.07	.27
5	.08	.01	.10	.09	.01	.04
6	.06	.00	.00	.12	.01	.04
	.40	.10	1.00	1.00	.26	1.00

For explanation of symbols, see Table 2

As can be seen from Table 4, there is a significant correlated canonical dimension in lesson 2. In this lesson the six dimensions extract 40% of

the variance in the set of personality variables, i.e. +2%. Compared to micro-lesson 1 three dimensions are responsible for an essential part of the variance. At least two if not three independent canonical components are needed for an adequate representation of the structure. The first component is, however, responsible for the greater part of the variance. In the subject-object relations there is 26% redundant variance, i.e. +1% compared to lesson 1. The first and second R_c are somewhat higher and at least equally high respectively as the first correlation in lesson 1. The canonical components are presented in Table 5.

Table 5 shows how the first predictor vector correlates positively with variables 8, 14 and 23, while 34 and 4 define the negative pole of the vector. All relations with ego as subject correlate substantially with the criterion vector. The most important, however, is the ego-NPO relation.

Regarding the student teachers' perception during micro-lesson 2, the following features of personality are the most important for predicting the student teachers' perception of the ego-NPO relation:

Table 5. Canonical component structure. Micro-lesson 2: Perception

Variable No.	Designation	Component 1	2	3	4
14	Preadult-fixated Role	.35	.07	-.32	-.31
25	Parmia	.08	.67	.02	-.25
34	High Ergic Tension	-.32	.08	.04	-.04
41	Severity of Judgement	.03	.25	-.17	.15
21	Ego Strength	.27	-.13	.07	-.04
4	Self-assertion	-.44	.15	.00	.00
12	Nondirective Role	-.06	-.12	-.22	-.29
26	Emotional sensitivity	-.12	-.16	.10	-.08
5	Desire to be best and to be in the centre	-.06	-.06	-.03	-.07
3	Social-communicative qualities	.13	.54	-.18	.07
35	Series	-.08	-.04	-.47	-.42
37	Matrices	-.21	-.21	-.54	-.41
8	Ego Weakness	.53	.06	-.22	-.01
15	Orderly Role	.16	-.13	-.19	.38
23	Surgency	.30	.28	-.00	-.16
36	Classifications	-.23	-.31	.17	-.64
Subject-object relations					
1	Ego-ego relation	.57	.60	.31	.45
2	Ego-pupil relation	.30	.11	.06	.79
3	Ego-NPO relation	.82	.20	-.22	.33
4	Pupil-ego relation	.01	.68	-.52	.33
5	Pupil-pupil relation	-.02	.22	.12	.70
6	Pupil-NPO relation	.18	-.04	-.26	.81

Ego Weakness: shift from neurotics. Individuals with ego weakness are in their answers "easily" influenced by how a group of "neurotics" have

answered in a survey. They show changes "from neurotics", which are taken as a sign of "ego weakness". This scale is related to Cattell's "social plasticity".

Preadult-fixated Role means that teachers with high points on this scale identify more easily with children than with adults. They obtain their satisfaction from the company of children. Their behaviour is thought to reflect an attitude of idealization of childhood (Sundgren, 1967, p. 47).

Surgency describes individuals who are cheerful, talkative and expressive, bubbling over with energy and activity. This factor is considered to be of the most essential components defining extroversion.

High Ergic Tension. This factor has been described (see p. 19).

Self-assertion. This factor measures the individual's attitude to other individuals or groups concerning the ability to assert one's own opinions and act according to one's own norms, irrespective of whether authorities are of a different opinion. Attempts to influence others are also included. The factor describes a continuum with the poles self-assertion-adjustment or I-we. In the situations described concretely the individual is confronted with the following problems: (1) attacking the opinions of others, (2) discussing unknown subjects, (3) influencing pupils with a different opinion, (4) asserting one's own opinion in opposition to someone older, (5) rejecting unfair criticism, (6) keeping people at a distance, (7) being able to put on an act, (8) acting in accordance with accepted norms and (9) accepting criticism. High points indicate extroversion. This factor correlates (r = -39) with Cattell's "Parmia".

To sum up, the student teachers' perception can also in the second lesson be predicted maximally by personality features defining the dimension "introversion-extroversion". As in the first lesson, the student teachers' temporary emotional reactions to situations play an important part in the prediction, although the factor now shows a negative correlation. However, no intelligence factor is to be found among the predictors of the first canonical component. The two factors, "Ego Weakness" and "Preadult-fixated Role" indicate that both child-centredness and uncertainty about one's own person have been important for the perception of the "I-it" relation in lesson 2, i.e. the perception of the functional qualities of non-personal objects with regard to whether or not they fit in with one's own plans. The prediction mainly concerns the statements dealing with the planning and assessment of lessons, the use of teaching aids, disposition on the blackboard, communication of hard facts and linking up with the pupils' initial knowledge.

As can be seen from Table 4, a relatively large part of the total redundant variance is also found in the canonical dimensions 2 and 4. While the second dimension does not contribute further information in addition to that presented for the student teachers' perception during micro-lesson 1, the fourth dimension should be able to provide even more information. Variable No. 15, i.e. "Orderly Role", correlates positively with the fourth predictor vector. The negatively correlated variables are Nos. 36, 35 and 37. Variables Nos. 6, 2 and 5 correlate substantially with the criterion vector. This fourth component indicates that (1) the teacher's use of disciplinary rules that provide assurance in personal relations with the pupils (cf. ego weakness), (2) the teacher's "fluid general intelligence" and (3) the teacher's attitude to the idealization of childhood are all valuable for the prediction of the "they-it" relation, i.e. the pupils' reaction to non-personal objects (interest in the subject), the student teacher's own presentation of the subject and the influence of the CCTV studio. These personality features are also important for the student teachers' perception of the "I-they" relation, i.e. how they themselves react towards the pupils as objects (e.g. non-verbal contact with or support of pupils) and for the "they-them" relation, i.e. how the pupils act between themselves (e.g. the pupils' conversational discipline).

The discussion has shown how the student teachers' perception in lessons 1 and 2 can on all essential points be explained by means of the first canonical component in the analysis concerned. If, however, a more detailed description is desired, components 2 and 3 should also be studied in lesson 1, while in lesson 2 components 2 and 4 should be examined, since they show redundant variance ($R_t \geq .10$). Personality features that are of importance for the prediction load on a second order or "second-stratum" factor, Q_I (Cattell et al., 1970, p. 112), which refers to "sociable" behaviour. The poles of that factor are "exvia" and "invia". The more popular lables are extroversion and introversion. Cattell's primary factors A, E, H and Q_2 load on this factor. Thus, extroversion is the fundamental personality feature (3, 4, 25, 23), but it is modified by a factor that describes the student teachers' strength of ego (8) and idealization of childhood (14). A part is also played by a factor describing the student teachers' emotional reactions to situations (34). Further evidence in favour of this interpretation was provided by the examination of the second, third and fourth canonical components. There it emerged that the factor describing preoccupation with disciplinary rules in order to acquire assurance in personal relations with the pupils (15) is also important. Finally the intelligence variables

(35, 36) showed no substantial positive correlations with the vectors, but when an association occurred, these variables proved to be negatively correlated with the vectors considered.

3.4.2 Evaluation of subject-object relations

As a result of the stepwise processed multiple regression analysis (cf Box 3), the canonical correlation analyses of student teachers' evaluations have been carried out with partly different personality variables. The result for micro-lesson 1 is presented in Table 6.

Table 6. Canonical correlations between personality variables and subject-object relations: χ^2 test and redundancy index

Roots	R_c	R_c^2	Observed χ^2 value	df	Λ	$z_{.99} = 2.31$
1	.65	.42	109.51	102	.267	.55
2	.52	.27	64.72	80	.459	
3	.41	.14	38.89	60	.623	
4	.37	.14	23.97	42	.749	
5	.27	.08	11.56	26	.870	
6	.24	.06	5.07	12	.941	

Wilks's Λ = .267

Personality variables				Subject-object relations		
	V_p	R_{dp}	R_t	V_k	R_{dk}	R_t
1	.07	.03	.38	.14	.06	.35
2	.06	.02	.25	.13	.03	.18
3	.08	.01	.13	.18	.03	.18
4	.06	.01	.13	.19	.03	.18
5	.07	.01	.13	.13	.01	.06
6	.05	.00	.00	.23	.01	.06
	.39	.08	1.00	1.00	.17	1.00

For explanation of symbols, see Table 2

As can be seen from Table 6 there is no significant correlated canonical dimension. The six dimensions extract in lesson 1 39% of the variance in the set of personality variables. The first four dimensions are responsible for a proportion of the total redundant variance that is $\geq .10$ on both sides. However, the first dimension is responsible for the greater part of redundant variance. In the subject-object relations there is only 17% redundant variance. The canonical component structure is given in Table 7.

Table 7. Canonical component structure. Micro-lesson 1: Evaluation

Variable No.	Designation	Component 1	2	3	4
Personality variables					
30	Guilt Proneness	-.40	-.42	.14	-.18
41	Severity of Judgement	-.37	-.41	-.13	-.20
37	Matrices	.18	.15	.02	.05
28	Autia	-.24	-.24	-.13	-.12
16	Dependent Role	-.08	-.22	.54	.20
23	Surgency	.00	.23	.24	-.12
13	Critical Role	-.41	-.05	.49	.15
6	Self-reliance	.51	.29	.07	.31
12	Nondirective Role	.07	.20	.24	.20
20	General Intelligence	.24	-.00	.04	-.28
35	Series	.49	-.26	.04	-.36
4	Self-assertion	.19	-.06	.03	.30
25	Parmia	.11	.33	.39	.19
11	Nurturant Role	.22	.26	.46	-.13
14	Preadult-fixated Role	.00	.26	.48	.23
19	Affectothymia	-.13	.35	-.08	.41
18	Dominant Role	-.14	.03	.00	-.26
Subject-object relations					
1	Ego-ego relation	.64	-.57	.35	.09
2	Ego-pupil relation	.06	.43	.36	.28
3	Ego-NPO relation	-.43	-.02	.55	.01
4	Pupil-ego relation	.13	.26	.26	.43
5	Pupil-pupil relation	-.08	-.12	-.08	.87
6	Pupil-NPO relation	-.44	-.40	-.18	.36

Table 7 shows that variables Nos. 6, 35 and 4 correlate positively with the first predictor variable, while variables 30 and 23 show negative correlations. Only variable No. 1 correlates positively with the criterion vector, while variables Nos. 3 and 6 show substantial negative correlations. The personality variables correlating positively with the predictor vector have the following content:

Self-reliance. This factor indicates the individual's belief in his ability to master different situations. This ability is probably based on flexibility, concentration, composure and openness. In the situations described concretely the individual is confronted with the following problems: (1) deviating from a plan made in advance, (2) changing a decision, (3) concentrating in disturbing surroundings, (4) acting calmly in an unexpected situation, (5) confiding everything to members of family and (6) having contact with pupils outside school. High points in this factor indicate flexibility and emotional security. This factor correlates negatively ($r = -.31$) with "Dominant Role" but positively ($r = +29$) with "High Self-sentiment", which means that

it describes the intensity of the emotional reactions and the individual's ability to control such reactions.

Series measures the individual's inductive reasoning. This factor loads on a second order factor called "fluid general intelligence".

Severity of Judgement. This variable indicates the teacher's tendency to choose different forms of punishment in order to correct the pupils' mistakes or misbehaviour. It is assumed that the individual's attitude to punishment is related to a lack of assurance (see Bjerstedt & Sundgren, 1968, p. 69).

The personality variables that correlate negatively with the first predictor vector can be described in the following way:

Guilt Proneness implies that the individual shows heightened fear and anxiety. The factor is thought to be related to feelings of guilt and diminished self-confidence. This factor is characteristic of individuals who (1) doubt their own ability to deal with difficult situations, (2) express a strict attitude towards upbringing instead of giving way and being lenient, (3) choose few friend and (4) have high standards of group conformity to rules. This factor belongs to Cattell's primary factors, which load on the second stratum factor Q_{II}, called "Adjustment-vs.-Anxiety".

Critical Role. Teachers with high points on this scale are characterized by a generally critical attitude to the school system and the qualifications of their superiors. They are improvers and reformers (Sundgren, 1967, p. 47).

These five personality variables just described can best predict the student teachers' evaluation of the "I-me" relation, i.e. actions, expectations and attitudes towards their own person. This relation is described by statements concerning the student teachers' emotional state, voice, posture and factual knowledge.

As Table 7 shows, components 2, 3 and 4 are also interesting. The personality variables that correlate positively with the second predictor vector are Nos. 25, "Parmia", and 19, "Affectothymia", while variable No. 41, "Severity of Judgement", correlates negatively. The ego-pupil relation correlates positively with the second criterion vector, while the ego-ego and pupil-NPO relations correlate negatively. The content of the individual variables have already, with the exception of "Affectothymia", been described.

Affectothymia characterizes individuals who are cooperative, easy to associate with, helpful, interested in making contact, sympathetic, generous and adaptable. They form active groups easily and are

generous in their personal relationships, less frightened of criticism, have no difficulty in remembering people's names and appear to be less dependent on precision work and on being able to meet the requirements of the environment exactly. This factor is included in Cattell's extroversion syndrome and expresses "social agreeableness".

The relations in which ego is the subject correlate substantially with the third criterion factor, but it is above all the ego-NPO relation that is important. Five personality variables with $r \geq .30$ correlate with the third criterion factor. In addition to the variables already mentioned, they are the following:

Dependent Role. Teachers with high points on this scale try to escape from their uncertainty by relying on superiors (Sundgren, 1967, p. 47).

Critical Role (see p. 26).

Parmia (see p. 19).

Nurturant Role Teachers with high points on this scale are characterized by a strong positive feeling for children and their needs. The love and appreciation they in return receive from the children is thought to provide their greatest satisfaction as teachers (Sundgren, 1967, p. 47).

Preadult-fixated Role (see p. 22).

The five predictor variables described above indicate that it should be possible to predict a positive evaluation of the ego-NPO relation, in addition to what has already been said in connection with the first canonical vector, on the basis of the personality features that are typical for teachers who are inhibited very little by the risks and demands of the environment and who express a child-centred teacher role.

The fourth canonical component shows that all the relations with the pupil as subject correlate substantially with the criterion vector, while the pupil-pupil relation correlates most highly. The following three variables correlate positively with the predictor vector, while the fourth variable given shows a negative correlation:

Self-reliance (see p. 25).

Self-assertion (see p. 22).

Affectothymia (see pp 26-27).

Series (see p. 26).

The fourth canonical dimension indicates that student teachers with high points in factors describing an extrovert personality express in their eva-

luation of the pupils tolerance of the pupils' behaviour. However, inductive reasoning correlates negatively with this dimension.

For the prediction of the student teachers' evaluation during micro-lesson 1, ten personality features have proved to correlate with $r \geq .30$. As has emerged from the discussion, there are four independent canonical dimensions that have proved to be important.

In the first dimension the evaluation in the ego-ego relation is the criterion variable that can best be predicted by personality features included in an "Adjustment-vs.-Anxiety" syndrome that is defined by Cattell's primary factors C, L, O, Q_3, Q_4. This factor deals with the intensity ("id pressure") and control of emotional reactions, i. e. anxiety contra emotional adjustment (see Cattell et al., 1970, p. 118). This is further emphasized by the student teachers' punishing attitude to misbehaviour by the pupils, which is thought to express uncertainty on the part of the individual.

The second dimension concerns mainly the ego-pupil relation on the criterion side. Positive evaluations of this relation are made by student teachers who are extroverted, who have low points on "Correction of pupils" and who express assurance.

The third dimension has relations with the ego as subject. The personality features correlating highest with this dimension express a child-centred teacher role.

Finally the relations with the pupil as subject correlate with the fourth criterion variable and the student teachers' positive evaluations can best be predicted by means of personality variables expressing extrovert personality features.

To sum up, the student teachers' evaluation of the ego-ego relation in the first lesson is related to personality features that determine the ability to control emotional reactions and to overcome uncertainty. But in addition to this the student teachers' child-centredness and extroversion are also important for the evaluation of primarily the ego-NPO and the pupil-pupil relation, which is shown by the third and fourth canonical dimensions.

The analysis of the student teachers' evaluation in lesson 2 is presented in Table 8.

As can be seen from Table 8, there is no significant correlated canonical dimension in lesson 2 either. The six dimensions extract in lesson 2 38% of the variance (compared to 39% in the first lesson) from the set of personality variables. However, in the subject-object relations there is only 18% (+1% compared to the first lesson) predictable variance. The greatest part of the total redundant variance is associated with the first canonical component. But if all redundant variance ($R_t \geq .10$) is to be ex-

plained, four components should be studied more closely. The canonical component structure is given in Table 9.

Table 8. Canonical correlations between personality variables and subject-object relations; X^2 test and redundancy index

Roots	R_c	R_c^2	Observed X^2 value	df	Λ	$z_{.99} = 2.31$
1	.54	.29	96.84	102	.311	-.32
2	.51	.26	67.92	80	.441	
3	.41	.17	43.08	60	.595	
4	.41	.17	27.65	42	.717	
5	.33	.17	12.66	26	.859	
6	.19	.04	3.03	12	.964	

Wilks's $\Lambda = .311$

	Personality variables			Subject-object-relations		
	V_p	R_{dp}	R_t	V_p	R_{dp}	R_t
1	.09	.03	.43	.14	.04	.22
2	.05	.01	.14	.17	.05	.33
3	.06	.01	.14	.23	.04	.22
4	.07	.01	.14	.23	.04	.22
5	.05	.01	.14	.12	.01	.06
6	.05	.00	.00	.10	.00	.00
	.38	.07	1.00	1.00	.18	1.00

For explanation of symbols, see Table 2

Table 9. Canonical component structure. Micro-lesson 2: Evaluation

Variable No.	Designation	Component 1	2	3	4
	Personality variables				
30	Guilt Proneness	.34	-.11	.11	-.06
41	Severity of Judgement	.59	-.24	-.38	-.22
37	Matrices	.05	.05	-.02	.52
28	Autia	.44	-.16	-.29	.20
16	Dependent Role	.22	.16	-.27	.13
23	Surgency	.18	.32	.07	.13
13	Critical Role	.49	.03	.05	-.01
6	Self-reliance	-.11	.08	.48	-.49
12	Nondirective Role	.36	-.23	.21	.29
20	General Intelligence	-.42	.31	.11	-.13
35	Series	-.22	-.40	.53	-.13
4	Self-assertion	.27	-.46	-.09	.36
25	Parmia	.12	.16	.01	.13
11	Nurturant Role	.12	.08	.07	-.03
14	Preadult-fixated Role	.13	.00	.30	-.08
19	Affectothymia	.26	.02	.07	.01
18	Dominant Role	-.20	.17	-.24	-.45

Table 9. (cont.)

1	Ego-ego relation	-.22	-.24	.75	-.41
2	Ego-pupil relation	-.19	.67	.19	-.55
3	Ego-NPO relation	.47	.62	.29	-.29
4	Pupil-ego relation	.30	.14	.41	.68
5	Pupil-pupil relation	.61	-.28	.55	.05
6	Pupil-NPO relation	.31	-.25	-.45	-.63

Table 9 shows that the following variables correlate positively with the first predictor vector: 41, 13, 28, 12 and 30. The variable 20 correlates negatively. Variables 3 to 5 correlate positively with the first criterion vector, but the pupil-pupil relation correlates most highly. Three new personality variables have been added for the student teachers' evaluation in the second micro-lesson in addition to:

Severity of Judgement (see p. 26)

Critical Role (see p. 26)

Autia characterizes individuals with "an intense subjectivity and inner mental life". They need freedom and show a certain carelessness and irresponsibility in practical matters, but at the same time they are also characterized by higher internal tension caused by anxiety than individuals with low scores on this factor. Persons with high scores tend to feel that they are unaccepted in groups, but without bothering about it. This factor loads together with Cattell's primary factors I and M on a second stratum factor Q_{III} called "Pathemia - vs. - Cortertia". This factor describes a higher order factor with the more popular labelled poles "Sensitivity, Emotionalism - vs. - Though Poise" (see Cattell et al., 1970, p. 17).

Guilt Proneness (see p. 26)

Nondirective Role is a scale describing teachers who display a need to reduce the dependency of the children on the personality of the teacher for the purpose of in the long run developing autonomically functioning individuals (see Sundgren, 1967, p. 47).

General Intelligence measures the "crystallized" rather than "fluid intelligence" of the individual. By "Crystallized intelligence" is meant the other of the two second order factors established by Cattell. Tests measuring language ability, arithmetical skills and "topological reasoning" or logical thinking load on this factor.

Thus, in the second lesson student teachers characterized by sensitivity, a lenient attitude to child-upbringing and child-centredness appear largely

to evaluate the pupil-pupil relation positively. At the same time these student teachers have low points on the scale measuring correction of pupils and in the factor "Crystallized Intelligence".

"Surgency" and "General Intelligence" correlate positively with the second predictor factor. On the other hand, "Series", i.e. inductive reasoning and "Self-assertion" correlate negatively. These predict maximally the student teachers' evaluation of both the ego-pupil and the ego-NPO relations.

"Self-reliance", "Series" and "Preadult-fixated Role" correlate positively with the third predictor dimension, while the student teachers' attitude towards punishment correlates negatively. The student teachers' evaluation of the ego-ego relation can be predicted best, but the relations 4-6 display substantial correlations with the third criterion vector.

"Matrices" and "Self-assertion" correlate positively with the fourth predictor vector.

Matrices. This factor is considered to measure deductive reasoning. This test loads on Cattell's "Fluid General Intelligence". The test is intended to measure the "g" factor (General Ability Factor).

"Self-reliance" and "Dominant Role" correlate negatively with the fourth predictor vector.

Dominant Role is a scale describing teachers who display a need to have their own superiority and their own ego-value confirmed. The pupils' subordinate position in classroom situation gives satisfaction to teachers with high points here (see Sundgren, 1967, p. 47).

What can be predicted maximally is the student teachers' evaluation of the pupil-ego and pupil-NPO relation. But relations 1 and 2 also show substantial relations with the fourth criterion vector.

In the second lesson, the student teachers' evaluation appears primarily to concern the pupil-pupil relation. The evaluation of this relation seems to be able to be predicted maximally by means of personality features such as sensitivity, a lenient attitude to child-upbringing and child-centredness, together with the student teachers' tendency to recommend measures for disciplinary problems and general intelligence.

But the first canonical dimension does not appear to suffice as an explanation of all the essential redundant variance. A further three canonical dimensions are required for this purpose. The second dimension suggests that the student teachers' extroversion and general intelligence are important for the evaluation of the ego-pupil and ego-NPO relations. The third

dimension concerns the student teachers' ability to control emotional reactions and attitudes of idealization of childhood, together with the ability in inductive reasoning. This appears to be important for the evaluation of ego-ego relation.

The fourth dimension concerns the student teachers' extrovert personality features, ability in deductive reasoning, ability to control emotional reactions and need to dominate in classroom situations.

To sum up, the student teachers' evaluation in the second lesson can be predicted maximally in the pupil-pupil relation. The personality features that appear to be most important for the prediction are related partly to the "Cortertia"-syndrome, e.g. sensitivity, partly to the "Anxiety"-syndrome, e.g. emotionality. A negative relation on the other hand demonstrates the student teachers' ability in crystallization.

3.5 Multiple partial-correlation analysis

We have used the canonical correlation analysis model to investigate which personality variables maximally predict a weighted average of the student teachers' assessments of the subject-object relations. By means of the multiple partial-correlation analysis model we can study how great a part of the variance-covariance is related to separate subject-object relations. We now wish to study the following questions:

1. What is the correlation between the personality variables and e.g. the ego-ego relation, after the variance that is related to the other five summation variables (as measured by linear functions) has been removed?
2. How much unexplained variance-covariance remains, i.e. what is the size of the residuals?

The part of the variance that can be predicted for the separate summation variables is stated by means of squared multiple partial-correlations (R^2_p). Since the correlations between the residuals (unexplained parts of the variance) have been calculated in PARTL (see Cooley & Lohnes, 1971, pp. 201-220), it is also possible to study how great a part of the variance in the student teachers' perception and evaluation respectively in the individual micro-lessons remains as unexplained variance. Table 10 presents the results of the multiple partial-correlation analysis for the student teachers' perception in micro-lesson 1.

Table 10. Multiple partial-correlation analysis. Micro-lesson 1: Perception

Variable No.	Designation	R_p	R^2_p	F-ratio	$F_{.99}$ (16, 79)=2.30
1	Ego-ego	.48	.23	1.46	
2	Ego-pupil	.46	.21	1.31	
3	Ego-NPO	.50	.25	1.68	
4	Pupil-ego	.62	.38	3.05	**
5	Pupil-pupil	.50	.25	1.64	
6	Pupil-NPO	.42	.18	1.08	

Correlations between residuals

	1	2	3	4	5	6
1		.53	.42	.35	.20	.26
2			.49	.47	.42	.46
3				.34	.28	.51
4					.36	.28
5						.54
6						

Table 10 shows that in the first lesson 38% of the variance in the pupil-ego relation can be predicted from the personality variables. This result agrees well with the canonical correlation analysis, which showed that this relation correlates most highly ($r = .95$) with the first criterion vector. In the other subject-object relations between 20 - 25% of the variance can be predicted from the personality variables. The prediction is worst for the pupil-NPO relation, which also shows a correlation with the criterion vector that does not satisfy $r \geq .30$ in the canonical correlation analysis. The correlation matrix for the residuals suggests, however, that there is some variance left, which cannot be explained by means of the personality variables on which this calculation is based. Apart from two correlations all are significantly separated from zero.

The result of the multiple partial-correlation analysis for the student teachers' perception during micro-lesson 2 is given in Table 11.

Table 11 shows that 37% and 36% respectively of the variance that is associated with the ego-NPO and the ego-ego relations can be predicted from the personality traits. In the pupil-ego relation 29% of the variance and in the ego-pupil relation 20% of the variance can be predicted on the basis of the personality features. On the other hand, it seems as if only a very small amount of variance can be predicted for the pupil-pupil and pupil-NPO relations in the second lesson. The correlation between the residuals shows that there are significant correlations that are on the whole larger than in lesson 1. If this result is compared to what has

Table 11. Multiple partial-correlation analysis. Micro-lesson 2: Perception

Variable No.	Designation	R	R^2_p	F-ratio	$F_{.99}$ (16,79)=2.30
1	Ego-ego	.60	.36	2.82	**
2	Ego-pupil	.44	.20	1.20	
3	Ego-NPO	.61	.37	2.88	**
4	Pupil-ego	.54	.29	2.00	
5	Pupil-pupil	.38	.14	.82	
6	Pupil-NPO	.42	.18	1.08	

Correlations between residuals

	1	2	3	4	5	6
1		.63	.60	.37	.46	.34
2			.48	.48	.47	.44
3				.54	.56	.41
4					.53	.23
5						.46
6						

emerged from the canonical correlation analysis, the ego-NPO and the ego-ego relations prove to correlate considerably higher (r = .82, r = .57) with the first criterion vector than the others do. This can be interpreted as meaning that all essential information is to be found in the first canonical component, since the second one does not contribute any information in addition to what has already emerged in lesson 1.

To sum up, the prediction of the student teachers' perception during the first lesson mainly concerns which actions, expectations and attitudes the pupils direct at the student teachers. High points on the variables "Social-communicative qualities", "Parmia" and "High Ergic Tension" together with low values on the test "Classifications", i.e. ability in deductive reasoning, leads to a positive perception.

The prediction of the student teachers' perception during the second lesson mainly concerns how the student teachers act in relation to non-personal objects in their environment and the way in which they fit or do not fit in with the student teachers' plans, plus the actions, expectations and attitudes the student teachers have in regard to themselves.

High points on the variables "Ego Weakness", "Surgency" and "Pre-adult-fixated Role" together with low values on "High Ergic Tension" and "Self-assertion" or the degree of extroversion are related to a positive perception in the second lesson. The perception has changed, regarding which relation(s) is concerned and it has also become more differentiated. At the same time this means that several and partly different personality

features are required to predict the student teachers' perception.

The multiple partial-correlation analysis of the student teachers' evaluation during micro-lesson 1 is presented in Table 12.

Table 12. Multiple partial-correlation analysis. Micro-lesson 1: Evaluation

Variable No.	Designation	R_p	R^2_p	F-ratio	$F_{.99}(17, 78) = 2.24$
1	Ego-ego	.54	.29	1.85	
2	Ego-pupil	.35	.12	.62	
3	Ego-NPO	.45	.20	1.16	
4	Pupil-ego	.33	.11	.55	
5	Pupil-pupil	.36	.13	.68	
6	Pupil-NPO	.42	.18	1.00	

Correlations between residuals

	1	2	3	4	5	6
1		.30	.26	.20	.01	.18
2			.51	.12	.09	.35
3				.07	.02	-.05
4					.05	-.05
5						.13
6						

As can be seen from Table 12, in the first lesson 29% of the predictable variance in the student teachers' evaluation is associated with the ego-ego relation. A comparison with the canonical correlation analysis shows that this is the relation which correlates most highly ($r = .64$) with the criterion vector. In the ego-NPO and pupil-NPO relations 20% and 18% respectively of the variance can be predicted from the personality variables, but both the relations correlate negatively with the criterion vector. The result can be interpeted as meaning that all essential information exists in the first canonical dimension and that the ego-ego relation is the one that can maximally be predicted. The correlation matrix shows moreover that not much variance-covariance remains. Only three of the 15 correlations are significantly separated from zero.

The multiple partial-correlation analysis of the student teachers' evaluation during lesson 2 is given in Table 13.

Table 13 shows how the variance in the student teachers' evaluation in lesson 2 is spread relatively evenly over all the subject-object relations. The two variable domains for which 20% of the variance can be predicted are the student teachers' evaluation of the ego-NPO and the pupil-pupil relations. A comparison with the canonical correlation analysis shows that it is these two relations that correlate most highly ($r = .61$, $r = .47$) with the criterion vector. But the pupil-ego and pupil-NPO relations also display

Table 13. Multiple partial-correlation analysis. Micro-lesson 2: Evaluation

Variable No.	Designation	R_p	R^2_p	F-ratio	$F_{.99}$ (17, 78) = 2.24
1	Ego-ego	.41	.17	.91	
2	Ego-pupil	.44	.19	1.08	
3	Ego-NPO	.45	.20	1.15	
4	Pupil-ego	.41	.16	.88	
5	Pupil-pupil	.44	.20	1.12	
6	Pupil-NPO	.41	.17	.94	

Correlations between residuals

	1	2	3	4	5	6
1		.21	.32	.03	.11	.06
2			.35	-.05	-.10	.20
3				.08	.03	.09
4					.31	-.31
5						-.21
6						

substantial correlations ($r \geq .30$) with the first criterion vector. The correlation matrix shows that there is no variance worth mentioning left. A large part of the predictable variance is associated with the first canonical component.

To sum up, the prediction of the student teachers' evaluation during the first lesson mainly concerns the actions, expectations and attitudes that are directed at one's own person. High points on the variables "Self-reliance", "Series", i.e. inductive reasoning, and "Severity of Judgement" together with low scores on "Guilt Proneness" and "Critical Role" are related to a positive evaluation.

The prediction of the evaluation in lesson 2 mainly concerns the pupils' actions, expectations and attitudes towards themselves and other pupils, together with the student teachers' evaluation of how non-personal objects have or have not fitted in with their plans. High points on the variables "Critical Role", "Autia", "Nondirective Role" and "Guilt Proneness", together with low scores in the factor "General Intelligence", i.e. the ability to crystallize, and "Matrices", i.e. deductive reasoning, are related to a positive evaluation.

4. SUMMARY

The analyses in this report were carried out for the purpose of studying how important different personality features are for the individual's perception and evaluation of his own video-recorded teaching behaviours on different occasions.

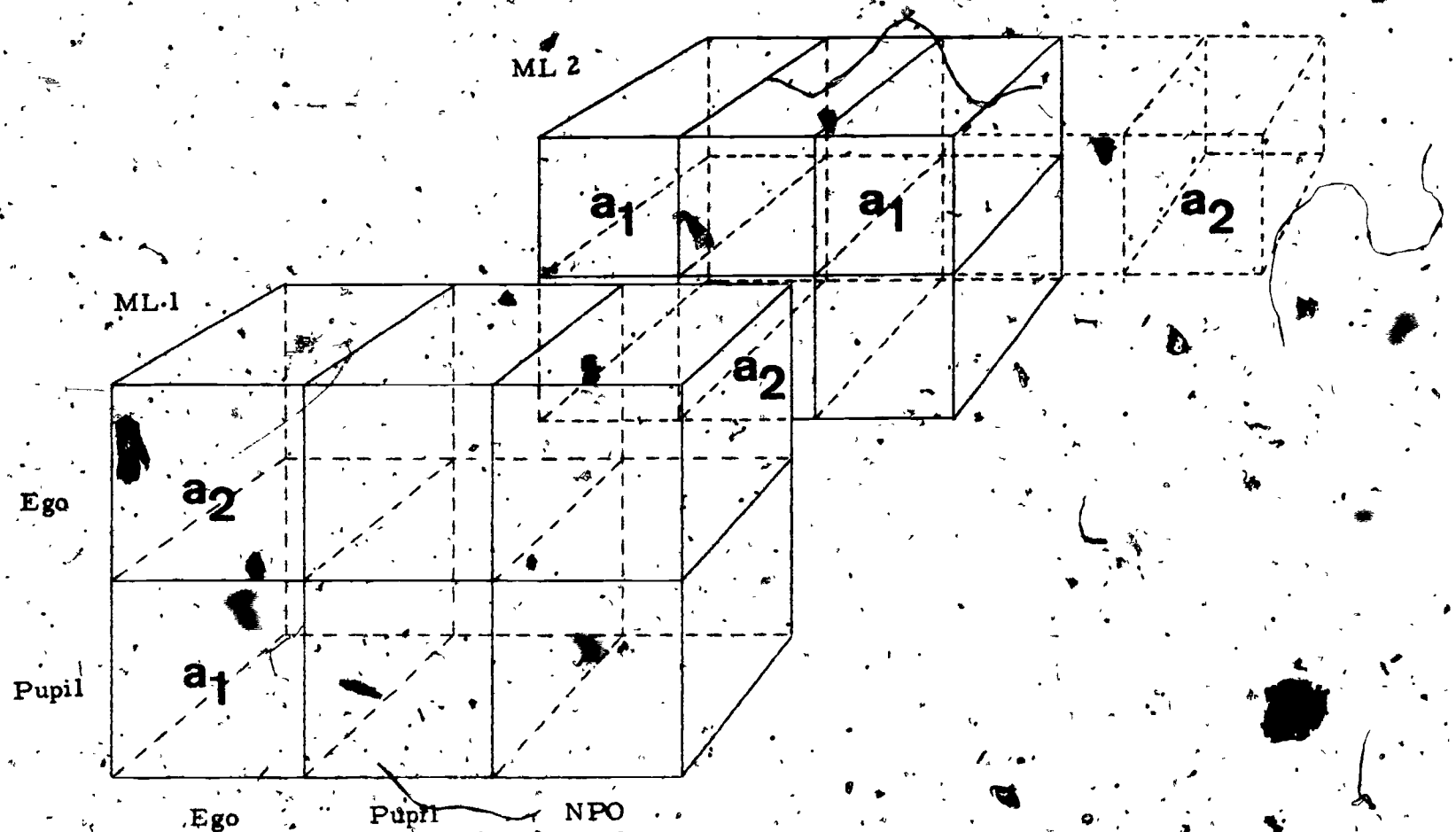
Taking a structuralistic view of the individual's "self" as a starting point, a study was made of whether and to what extent 41 different personality variables could be used for prediction of the perception and evaluation of six different subject-object relations on two different teaching occasions.

Using multivariate data analyses, both prediction problems and the meaning of the relations between the different groups of variables have been studied. Multivariate and factorial discriminant analyses were used to study to what extent the centroids referring to the experimental factors differ significantly from each other. As expected, no difference of any importance for this analysis has been found. By calculating a sequence of multiple linear regression equations in stepwise manner, an attempt was then made to determine the personality variables that lead to the greatest reduction of the error variance. (For detailed information on this analysis, see Skog-Östlin, 1975.) For the student teachers' perception, sixteen personality variables satisfied the criteria of the analysis, while for the evaluation there proved to be seventeen such variables. On the basis of these variables, canonical correlation analyses were made in order to find the smallest number of personality variables that must be controlled or extracted for an elimination of all essential linear relations between the personality variables and the six subject-object relations. Finally multiple partial-correlation analyses were carried out for the purpose of studying how great a part of the variance-covariance is related to the separate subject-object relations.

The main result of the analyses is presented in Figure 1. The foreground in Figure 1 represents the measuring instrument's six different subject-object relations for micro-lesson 1. The disconnected figure in the background symbolizes the measuring instrument's six subject-object relations for micro-lesson 2. The ego-NPO relation is projected twice in order to indicate the prediction of both perception and evaluation for this relation. The small letters in bold point state the assessment, the index Figure 1 representing the student teachers' perception and 2 their evaluation.

Figure 1 shows how the student teachers' perception can in lesson 1 best be predicted for the pupil-ego relation, while on the same occasion their evaluation can best be predicted for the ego-ego relation.

For lesson 2, Figure 1 shows that the student teachers' perception can



a_1: Perception

a_2: Evaluation

ML 1: Micro-lesson 1

ML 2: Micro-lesson 2

Figure 1. Prediction of student teachers' perception and evaluation of subject-object relations in two different micro-lessons

best be predicted for both the ego-ego and the ego-NPO relations. The student teachers' evaluation in lesson 2 can on the other hand best be predicted for both the pupil-pupil and the ego-NPO relations.

Very briefly the content can be described in the following way:

1. In micro-lesson 1 the weighted average of four personality variables is the best predictor for the student teachers' perception of the pupil-ego relation. The contents of this relation between the predictor and the criterion variable are the following:

Student teachers with high points in the factor "Socially-communicative qualities" consider that they can master different concretely described situations requiring self-esteem, authority and linguistic sensitivity. They are also characterized by "Parmia", which means that they are uninhibited socially as a result of an absence of shyness. At the same time they also display heightened emotional tension, which may be an expression of temporary emotional reactions to a particular situation. The student teachers' ability in deductive reasoning appears to be of no importance in this context, however. In summing up, it can be said that the variables describe student teachers with extrovert personality features.	Student teachers with high points in the perception of the pupil-ego relation state that during the lesson the pupils follow instructions, do not contradict, ask questions concerning the subject under discussion and that the pupils during the lesson seldom give answers to questions other than those expected by the student teacher.

2. In micro-lesson 2 the average of five personality variables form the best predictor of the student teachers' perception of both the ego-NPO and the ego-ego relations. This relation between the predictor and the criteria variables are the following:

Student teachers with high points on the scale "Ego Weakness" are easily influenced. But they are also characterized by "Surgency",	Student teachers with high points in the perception of the ego-NPO relation state that their own teaching is varied for the pupils,

which means that they are cheerful. They are talkative, expressive and bubbling over with energy and activity. At the same time they are "Preadult-fixated", i.e. they identify more easily with children than with adults. Heightened emotional tension as an expression of emotional reactions to temporary situations and "Self-assertion", i.e. the student teachers' position when asserting their own opinions and acting in accordance with their own norms, correlates negatively with this predictor component. In summing up the variables can be said to describe student teachers with extrovert personality features that are modified by a factor related to "Social plasticity" and a scale expressing a certain degree of child-centredness.

that the TV studio has little effect on their way of teaching, that their rough and detailed planning is good, that teaching aids are often used, that the subject is presented clearly, that the teaching abounds in facts, that the linking up with the pupils' previous knowledge was good and that there are no unnecessary deviations from the subject. Student teachers with high points in the perception of the ego-ego relation state that they are relaxed, behave with assurance, are patient with the pupils and have a sense of humour, speak in a loud, clear and varied voice, rarely use gestures or fiddle with anything (e.g. twisting a ring), have good factual knowledge. They do not make use of stereotyped expressions, use complete sentences, are linguistically correct, speak without dialectal accent, never use difficult words without explaining them (e.g. technical terms), always know how they intend to continue or what they are going to say, write legibly and never put rhetorical questions.

However, it should in conclusion also be mentioned that the canonical correlation analyses have shown that in both lessons there are two canonical dimensions dealing with the teacher's preoccupation with rules and regulations for the purpose of gaining assurance in their personal relationships with the pupils.

3. In micro-lesson I the sum of five personality variables gives the best prediction of the student teachers' evaluation of the ego-ego relation. The content of this relation between the predictor and the criterion variables are as follows:

Student teachers with high scores in the factor "Self-reliance" consider that they are capable of mastering different concretely discribed situations requiring flexibility, concentration and composure and openness. They show a good ability in inductive reasoning but they have a tendency to recommend severe punishments in order to deal with the pupils' faults and misbehaviour. At the same time they display a heightened fear and anxiety together with a generally critical attitude towards the school system and the qualifications of their superiors. To sum up, the variables describe the intensity of the emotional reactions and student teachers' ability to control these reactions. High scores indicate emotional assurance.

Student teachers with high scores in the evaluation of the ego-ego relation state the following: they are influenced positively by the tension during the lesson. Assured behaviour, patience with the pupils and a sense of humour are all important. They also consider vocal variation, clarity of speech, vocal pitch and posture during the lesson to be important. They feel it is important to use gestures and at the same time judge that the student teachers' own fiddling with objects during the lesson does not distress the pupils. Having factual knowledge is considered to be important and the use of stereotyped expressions to be disturbing. The use of incomplete sentences is judged as being undistressing. The same applies to the use of linguistically incorrect expressions and dialectal accent. While the use of difficult words (without explanation) is judged as being meaningless from the pupils' point of view. The student teachers themselves do not feel having mental blocks to be distressing. The legibility of their handwriting is considered important and putting rhetorical questions as felt to be distressing.

In micro-lesson 2 the sum of six personality variables gives the best prediction of the student teachers' evaluation of both the pupil-pupil and ego-NPO relations. The content of this relation between the predictor and the criteria variables are as follows:

Student teachers with high scores show a generally critical attitude to the school system and the qualifications of their superiors. They have among other things a need for freedom and display a certain degree of carelessness and irresponsibility in practical matters. At the same time they have a higher ergic tension caused by anxiety than student teachers with low scores in this factor. However, they also show a need to reduce the pupils' dependence in order that they may gradually develop into independent individuals. The factor "Guilt Proneness" indicates that student teachers with high scores in this factor doubt their own ability to master difficult situations. Deductive reasoning are however negatively correlated with this dimension. To sum up, the variables describe student teachers who show a certain amount of uncertainty and are characterized by emotionality and sensitivity traits.

Student teachers with high scores in the evaluation of the pupil-pupil relation state as follows: They do not find it distressing when the pupils speak at the same time, speak to each others about things outside the subject and play together during the lesson. They consider it important that the pupils discuss with each other the subject of the lesson. Student teachers with high scores in the evaluation of the ego-NPO relation state as follows: that it is important that the lesson should be varied for the pupils. The influence of the TV studio gives them assurance. It is important to plan the lesson both roughly and in detail. It is also important to use the blackboard and highly suitable teaching aids. The lay-out of what is written on the blackboard and the form in which the subject is presented are both considered important. The communication of hard facts in the teaching is considered important, as is the ability to link up with the pupils' previous knowledge, while unnecessary digressions from the subject are thought to be unimportant.

In the same way as in the analysis of the student teachers' perception, the evaluation also produces canonical dimensions which give information in addition to what can be explained by the first canonical component. In the first lesson these express extrovert personality traits and a certain child-centredness, while in the second lesson it is extroversion and the student teachers' ability to crystallize together with a need to dominate classroom situations that assert themselves.

Finally the result of this study could be made the basis of the following hypotheses:

1. In lesson 1 the student teachers' perception is concentrated mainly on the "they-me" relation, i.e. perceptions concerning the pupils actions against the "teacher".

2. In lesson 1 the student teachers' evaluation is primarily concentrated on the "I-me" relation, i.e. how I as "teacher" have succeeded in this first confrontation.

3. In lesson 2 the student teachers' perception is concentrated on the "I-they" relation, i.e. the execution of the plan of the lesson and the use of various teaching aids. But the perception also concerns the "I-me" relation, i.e. aspects involving the student teacher's own person, which could best be expressed as a "test of hypotheses about one's own behaviour".

4. In lesson 2 the evaluation is primarily concentrated on the "They-them" and "I-it" relations. Thus, it is assumed that during the second lesson the student teachers evaluate how distressing or undistressing and how important or unimportant the pupils' behaviour towards each other is. At the same time the evaluation concerns how varied the teaching was or how suitable the teaching aids used were.

The analyses described here and the results presented elsewhere do not unfortunately permit an empirical test of hypotheses 1-4. It is possible that a detailed study of the student teachers' oral comments could produce some empirical proof. Future empirical studies should be designed both to test the hypothesis stated above and to investigate the development of the student teachers' perception and evaluation. What happens, for example, to the student teachers' focussing of attention and what changes occur in the structure of their perception and evaluation in a third, fourth etc. lesson?

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6. APPENDICES

1. Product-moment correlations of the 41 personality variables designated in Box 1 — 1:1

2. The discrimination ability of 41 personality variables with respect to the experimental factors: Summary of MANOVA & FACDIS statistics — 1:2-1:4

3. Rank order of the prediction values of the personality variables for the subject-object relations, based on R^2 — 2:1-2:6

4. Product-moment correlations between the predictor variables designated in Box 3 and the subject-object relations — 3:1-3:2

Table 1. Product-moment correlations of the 41 personality

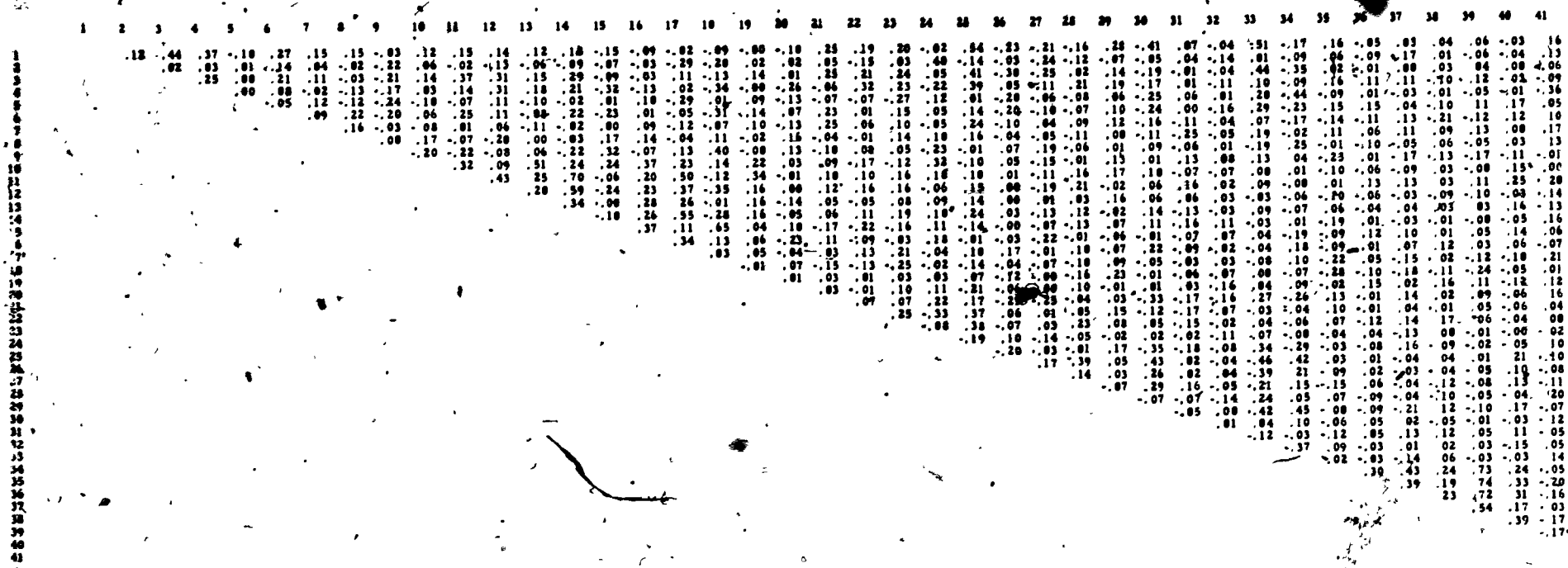

Table 2. The discrimination ability of 41 personality variables with respect to the experimental factors: Summary of MANOVA & FACDIS statistics

$F_{.99}$ (df_1, df_2)	Hypothesis 1 F-ratio	η	$F_{.99}$ (df_1, df_2)	Hypothesis 2 F-ratio
(315, 17967)	1.14	.55	(42, 235)	1.73**
(408, 17875)	1.12	.41	(48, 229)	.92
(630, 17768)	1.11*	.65	(60, 218)	1.52**
(759, 17735)	1.30***	.52	(66, 212)	.90

η : Wilks's generalized eta

Table 3. Multivariate significance test for analysis 1 (F VIII + PO + TPS)

Source	F-ratio	$F_{.99}(14, 81) = 2.43$	Wilks's lambda (Λ)
Tutoring (H)	1.17		.83
Self-confrontation (T)	1.39		.81
Interaction (H&T)	2.94	**	.66

Discriminant structure

Variable No.	Designation	H	T	H&T
1	Acceptance of oneself	.01	.07	-.30
2	Acceptance of others	.08	-.24	.27
7	Suggestibility to Authority	.30	-.47	.48
8	Ego Weakness	.24	.07	.32
9	Practical Role	-.28	.21	-.26
10	Status-striving Role	.13	.23	.05
11	Nurturant Role	.52	.26	-.00
12	Nondirective Role	.54	.15	-.15
13	Critical Role	-.07	.08	-.28
14	Preadult-fixated Role	.69	.43	-.15
15	Orderly Role	-.03	-.13	.09
16	Dependent Role	.35	-.40	.48
17	Exhibitionistic Role	.55	.32	-.02
18	Dominant Role	-.12	-.18	-.27

Centroids of the discriminant functions

h_1	-.40	t_1	.40
h_2	.43	t_2	-.43

Table 4. Contrasts for the interaction between tutoring and self-confrontation plus univariate F-ratios

Variable No.	Designation	h_1t_1	h_1t_2	h_2t_1	h_2t_2	F-ratio $F_{.99}(1,92) = 6.78$	
1	Acceptance of oneself	2.28	-2.28	-2.28	2.28	2.88	
2	Acceptance of others	- .90	.90	.90	- .90	2.07	
7	Suggestibility to Authority	-1.23	1.23	1.23	-1.23	7.22	**
8	Ego Weakness	- .95	.95	- .95	- .95	3.35	
9	Practical Role	.83	- .83	- .83	.83	1.89	
10	Status-striving Role	- .24	.24	.24	- .24	.14	
11	Nurturant Role	.02	- .02	- .02	.02	.00	
12	Nondirective Role	.50	- .50	- .50	.50	.89	
13	Critical Role	1.12	-1.12	-1.12	1.12	2.56	
14	Preadult-fixated Role	.49	- .49	- .49	.49	.79	
15	Orderly Role	- .26	.26	.26	- .26	.22	
16	Dependent Role	-1.50	1.50	1.50	-1.50	7.09	**
17	Exhibitionistic Role	.05	- .05	- .05	.05	.01	
18	Dominant Role	1.12	-1.12	-1.12	1.12	2.65	

Table 5. Multivariate significance test for analysis 3 (F VIII + PO + TPS + 3:A + HD + SJ)

Source	F-ratio	$F_{.99}(20, 75) = 2.16$	Wilks's lambda (Λ)
Tutoring (H)	1.10		.77
Self-confrontation (T)	1.37		.73
Interaction (H[redacted])	2.30	**	.62

Discriminant structure

Variable No.	Designation	H	T	H&T
1	Acceptance of oneself	.01	- .04	- .28
2	Acceptance of others	.07	.19	.25
7	Suggestibility to Authority	.27	.39	.45
8	Ego Weakness	.21	- .08	.30
9	A Practical Role	- .25	- .17	- .24
10	B Status-striving Role	.10	- .21	.06
11	C Nurturant Role	.45	- .22	.00
12	D Nondirective Role	.47	- .11	- .13
13	E Critical Role	- .06	- .05	- .27
14	F Preadult-fixated Role	.59	- .36	- .13
15	G Orderly Role	- .02	.11	.08
16	H Dependent Role	.31	.33	.44
17	I Exhibitionistic Role	.47	- .27	- .01
18	J Dominant Role	- .10	.18	- .26
35	Series	- .02	.11	.02
36	Classifications	- .11	.21	.04
37	Matrices	.21	.16	.12
38	Conditions	.35	.02	.10
40	Field articulation	.22	- .14	.34
41	Severity of Judgement	.19	- .40	- .12

Centroids of the discriminant functions

h_1	- .47	t_1	- .51
h_2	.47	t_2	.51

Table 6. Contrasts for the interaction between tutoring and self-confrontation plus univariate F-ratios

Variable No.	Designation	h_1t_1	h_1t_2	h_2t_1	h_2t_2	F-ratio	$F_{.99}$ (1,92) = 6.78
1	Acceptance of oneself	2.28	-2.28	-2.28	2.28	2.88	
2	Acceptance of others	-.90	.90	.90	-.90	2.07	
7	Suggestibility to Authority	-1.23	1.23	1.23	-1.23	7.22	**
8	Ego Weakness	-.95	.95	.95	-.95	3.35	
9	A Practical Role	.83	-.83	-.83	.83	1.89	
10	B Status-striving Role	-.24	.24	.24	-.24	.14	
11	C Nurturant Role	.02	-.02	.02	.02	.00	
12	D Nondirective Role	.50	-.50	-.50	.50	.89	
13	E Critical Role	1.12	-1.12	1.12	1.12	2.56	
14	F Preadult-fixated Role	.49	-.49	-.49	.49	.79	
15	G Orderly Role	-.26	.26	.26	-.26	.22	
16	H Dependent Role	-1.50	1.50	1.50	-1.50	7.09	**
17	I Exhibitionistic Role	.05	-.05	-.05	.05	.01	
18	J Dominant Role	1.12	-1.12	-1.12	1.12	2.65	
35	Series	-.02	.02	.02	.02	.01	
36	Classifications	-.05	.05	.05	-.05	.06	
37	Matrices	-.09	.09	.09	-.09	.40	
38	Conditions	-.07	.07	.07	-.07	.29	
40	Field articulation	-1.39	1.39	1.39	-1.39	4.37	
41	Severity of Judgement	.75	-.75	-.75	.75	.79	

Table 1. Rank order of the prediction values of the personality variables for the ego dimension, based on R^2: Perception

Test	ML 1 points (p)	f	$\bar{p}$	ML 2 points (p)	f	$\bar{p}$	Σp	Σf	$\Sigma \bar{p}$
1	0		0	0			0		0
2	0		0	3	1	3	3	1	3
3	0		0	7	1	7	7	1	7
4	8	1	8	20	3	6.6	28	4	7
5	16	2	8	15	2	7.5	31	4	7.7
6	3	1	3	0		0	3	1	3
7	1	1	1	0		0	1	1	1
8	1	1	1	0		0	1	1	1
9	1	1	1	13	2	6.5	14	3	4.6
10	13	3	4.3	4	1	4	17	4	4.2
11	6	1	6	1	1	1	7	2	3.5
12	0		0	4	1	4	4	1	4
13	5	1	5	8	2	4	13	3	4.3
14	9	1	9	0		0	9	1	9
15	0		0	8	1	8	8	1	8
16	0		0	0		0	0		0
17	5	1	5	0		0	5	1	5
18	0		0	0		0	0		0
19	6	1	6	0		0	6	1	6
20	0		0	0		0	0		0
21	0		0	0		0	0		0
22	5	1	5	0		0	5	1	5
23	9	1	9	0		0	9	1	9
24	0		0	5	1	5	5	1	5
25	8	1	8	0		0	8	1	8
26	7	1	7	9	1	9	16	2	8
27	4	1	4	0		0	4	1	4
28	10	1	10	0		0	10	1	10
29	8	1	8	2	1	2	10	2	5
30	3	1	3	10	2	5	13	3	4.3
31	2	1	2	3	1	3	5	2	2.5
32	0		0	0		0	0		0
33	0		0	5	1	5	5	1	5
34	20	2	10	6	1	6	26	3	8.6
35	0		0	6	1	6	6	1	6
36	6	1	6	8	1	8	14	2	7
37	0		0	11	2	5.5	11	2	5.5
38	5	2	2.5	10	1	10	15	3	5
39	0		0	1	1	1	1	1	1
40	4	1	4	5	1	5	9	2	4.5
41	0		0	0		0	0		0
Σ	165	30	5.5	165	30	5.5	330	60	5.5

Table 2. Rank order of the prediction values of the personality variables for the pupil dimension, based on R^2: Perception

Test	ML 1 points (p)	f	$\bar{p}$	ML 2 points (p)	f	$\bar{p}$	Σp	Σf	$\Sigma \bar{p}$
1	0			0			0		0.0
2	2	1	2	0			2	1	2.0
3	2	1	2	16	2	8	18	3	6.0
4	19	3	6.3	15	2	7.5	34	5	6.8
5	18	2	9	2	2	1	20	4	5.0
6	0			3	1	3	3	1	3.0
7	0			6	1	6	6	1	6.0
8	16	2	8	5	1	5	21	3	7.0
9	8	2	4	0			8	2	4.0
10	4	1	4	17	2	8.5	21	3	7.0
11	0			0			0		0
12	16	2	8	0			16	2	8.0
13	0			10	2	5	10	2	5.0
14	10	1	10	0			10	1	10.0
15	0			14	3	4.6	14	3	4.6
16	0			0			0	0	0
17	0			0			0	0	0
18	0			0			0	0	0
19	0			10	2	5.0	10	2	5.0
20	0			0			0		0
21	0			14	2	7	14	2	7.0
22	0			1	1	1	1	1	1
23	0			2	1	2	2	1	2
24	3	1	3	0			3	1	3
25	15	2	7.5	0			15	2	7.5
26	8	1	8	2	1	2	10	2	5.0
27	6	1	6	0			6	1	6
28	1	1	1	2	1	2	3	2	1.5
29	3	1	3	0			3	1	3
30	0			0			0		0
31	1	1	1	19	2	9.5	20	3	6.6
32	5	1	5	0			5	1	5
33	3	1	3	0			3	1	3
34	19	3	6.3	6	1	6	25	4	6.2
35	0			0			0		0
36	4	1	4	4	1	4	8	2	4.0
37	2	1	2	10	1	10	12	2	6.0
38	0			0			0		0
39	0			0			0		0
40	0			0			0		0
41	0			7	1	7	7	1	7
Σ	165	30	5.5	165	30	5.5	330	60	5.5

Table 3. Rank order of the prediction values of the personality variables for the ego and pupil dimensions, based on R^2: Perception

Ego (p)	Pupil (p)	Σp	Σf	p	Test No.
0	0	0	0		
3	2	5	2	2.5	
7	18	25	4	6.3	3
28	34	62	9	6.9	4
31	20	51	8	6.4	5
3	3	6	2	3.0	
1	6	7	2	3.5	
1	21	22	4	5.5	8
14	8	22	5	4.4	
17	21	38	7	5.4	
7	0	7	2	3.5	
4	16	20	3	6.7	12
13	10	23	5	4.6	
5	10	19	2	9.5	14
8	14	22	4	5.5	15
0	0	0	0	0	
5	0	5	1	5.0	
0	0	0	0	0	
6	10	16	3	5.3	
0	0	0	0	0	
0	14	14	2	7.0	21
5	1	6	2	3.0	
9	2	11	2	5.5	23
5	3	8	2	4.0	
8	15	23	3	7.7	25
16	10	26	4	6.5	26
4	6	10	2	5.0	
10	3	13	3	4.3	
10	3	13	3	4.3	
13	0	13	3	4.3	
5	20	25	5	5.0	
0	5	5	1	5.0	
5	3	8	2	4.0	
26	25	51	7	7.3	34
6	0	6	1	6.0	35
14	8	22	4	5.5	36
11	12	23	4	5.8	37
15	0	15	3	5.0	
1	0	1	1	1.0	
9	0	9	2	4.5	
0	7	7	1	7.0	41

Table 4. Rank order of the prediction values of the personality variables for the ego dimension, based on R^2: Evaluation

Test	ML 1 points (p)	f	$\bar{p}$	ML 2 points (p)	f	$\bar{p}$	Σp	Σf	$\Sigma \bar{p}$
1	0		0	0		0	0		
2	0		0	0		0	0		
3	0		0	8	1	8	8	1	8
4	22	3	7.3	21	3	7.0	43	6	7.1
5	0		0	14	3	4.6	14	3	4.6
6	7	1	7	6	1	6	13	2	6.5
7	3	2	1.5	10	1	10	13	3	4.3
8	3	1	3	0		0	3	1	3.0
9	1	1	1	9	1	9	10	2	5.0
10	0		0	0		0	0		0
11	0		0	0		0	0		0
12	8	1	8	0		0	8	1	8
13	10	1	10	3	1	3	13	2	6.5
14	0			0		0	0		0
15	0			3	2	1.5	3	2	1.5
16	0			8	1	8	8	1	8
17	0			0		0	0		
18	0			0		0	0		
19	0			13	2	6.5	13	2	6.5
20	0			0		0	0		
21	3	1	3	0		0	3	1	3.0
22	0		0	0		0	0		
23	7	1	7	8	1	8	15	2	7.5
24	6	1	6	0		0	6	1	6.0
25	5	1	5	5	1	5	10	2	5.0
26	0		0	0		0	0		
27	0		0	0		0	0		
28	8	1	8	0		0	8	1	8.0
29	9	1	9	0		0	9	1	9.0
30	0		0	0		0	0		
31	9	1	9	7	1	7	16	2	8.0
32	5	1	5	0		0	5	1	5.0
33	0			0		0	0		
34	0			5	1	5	5	1	5.0
35	0			0		0	0		
36	12	2	6	10	2	5	22	4	5.5
37	0			0		0	0		
38	4	1	4	4	1	4	8	2	4.0
39	0			0		0	0		
40	13	2	6.5	7	1	7	20	3	6.6
41	9	1	9.0	9	1	9	18	2	9.0
Σ	144	24	6.0	150	24	6.2	294	49	6.1

Table 5. Rank order of the prediction values of the personality variables for the pupil dimension, based on R^2: Evaluation

Test	ML 1 points (p)	f	p̄	ML 2 points (p)	f	p̄	Σp	Σf	Σp̄
1	0		0	0			0		0
2	4	1	4.0	0			4	1	4.0
3	2	1	2.0	0			2	1	2.0
4	22	3	7.3	10	2	5.0	32	5	6.4
5	0			0			0		0
6	0			8	1	8.0	8	1	8.0
7	0			0			0		0
8	9	2	4.5	2	1	2.0	11	3	3.7
9	9	2	4.5	4	1	4.0	13	3	4.3
10	5	1	5.0	3	1	3.0	8	2	4.0
11	6	1	6.0	7	1	7.0	13	2	6.5
12	6	1	6.0	0		0	6	1	6.0
13	0		0	9	1	9.0	9	1	9.0
14	13	2	6.5	0		0	13	2	6.5
15	5	1	5.0	5	1	5.0	10	2	5.0
16	0			8	1	8.0	8	1	8.0
17	0			0		0	0		0
18	6	1	6.0	0		0	6	1	6
19	0			6	1	6.0	6	1	6
20	7	1	7.0	0		0	7	1	7
21	8	1	8.0	6	2	3.0	14	3	4.7
22	0			0		0	0		0
23	9	1	9.0	7	1	7.0	16	2	8.0
24	0			0		0	0		0
25	16	2	8.0	8	1	8.0	24	3	8.0
26	3	1	3.0	4	1	4.0	7	2	3.5
27	1	1	1.0	0		0	1	1	1
28	0			0		0	0		0
29	0			5	2	2.5	5	2	2.5
30	10	1	10.0	0		0	10	1	10.0
31	7	1	7.0	8	2	4.0	15	3	5.0
32	0			12	2	6.0	12	2	6.0
33	0			0		0	0		0
34	0			0		0	0		0
35	0			7	1	7.0	7	1	7
36	5	1	5.0	6	1	6.0	11	2	5.5
37	10	1	10.0	23	3	7.6	33	4	8.3
38	0			0		0	0		0
39	0			0		0	0		0
40	4	2	2.0	7	2	3.5	11	4	2.8
41				10	1	10.0	10	1	10.0
Σ	167	29	5.8	165	30	5.5	332	59	5.7

Table 6. Rank order of the prediction values of the personality variables for the ego and pupil dimensions, based on R^2: Evaluation

Test	Ego (p)	Pupil (p)	Σ	f			$\bar{p}$	Test No.
1	0	0	0	0	0	0	0	
2	0	4	4	0	1	1	4.0	
3	8	2	10	1	1	2	5.0	
4	43	32	75	6	5	11	6.8	4
5	14	0	14	3	0	3	4.7	
6	13	8	21	2	1	3	7.0	6
7	13	0	13	3	0	3	4.3	
8	3	11	14	1	3	4	3.5	
9	10	13	23	2	3	5	4.6	
10	0	8	8	0	2	2	4.0	
11	0	13	13	0	2	2	6.5	11
12	8	6	14	1	1	2	7.0	12
13	13	9	22	2	1	3	7.3	13
14	0	13	13	0	2	2	6.5	14
15	3	10	13	2	2	4	3.3	
16	8	8	16	1	1	2	8.0	16
17	0	0	0	0	0	0	0	
18	0	6	6	0	1	1	6.0	18
19	13	6	19	2	1	3	6.3	19
20	0	7	7	0	1	1	7.0	20
21	3	14	17	1	3	4	4.3	
22	0	0	0	0	0	0	0	
23	15	16	31	2	2	4	7.8	23
24	6	0	6	1	0	1	6.0	24
25	10	24	34	2	3	5	6.8	25
26	0	7	7	0	2	2	3.5	
27	0	1	1	0	1	1	1.0	
28	8	0	8	1	0	1	8.0	28
29	9	5	14	1	2	3	4.7	
30	0	10	10	0	1	1	10.0	30
31	16	15	31	2	3	5	6.2	
32	5	12	17	1	2	3	5.7	
33	0	0	0	0	0	0	0	
34	5	0	5	1	0	1	5.0	
35	0	7	7	0	1	1	7.0	35
36	22	11	33	4	2	6	5.5	
37	0	33	33	0	4	4	8.3	37
38	8	0	8	2	0	2	4.0	
39	0	0	0	0	0	0	0	
40	20	11	31	3	4	7	4.4	
41	18	10	28	2	1	3	9.3	41

Table 1. Product-moment correlations between the predictor variables designated in Box 3 and the subject-object relations.

	Personality variables																Micro-lesson 1, perception Subject-object relations						Micro-lesson 2, perception Subject-object relations					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	17	18	19	20	21	22
1		.24	-.07	-.13	-.06	.21	.59	.03	-.02	.29	.06	.04	-.04	-.10	.19	-.04	.04	.05	.06	.05	.23	.10	.05	-.05	.23	.09	-.04	-.01
2			-.29	.10	.17	.39	.15	-.20	.01	.41	-.03	.16	-.16	-.14	.39	-.08	.26	.14	.09	.25	.19	.07	.24	-.03	.09	.24	.01	-.09
3				.14	-.26	-.09	-.08	.42	-.44	-.35	.02	-.14	-.03	.01	-.06	-.03	.20	-.15	-.20	-.20	.03	-.09	-.11	-.12	-.15	.03	.07	-.03
4					.16	-.09	-.28	-.10	.36	-.06	-.16	.17	.16	.07	-.01	-.01	.27	.07	.11	.12	.03	-.01	.08	.05	.06	.17	.08	.08
5						-.06	.12	.21	-.07	.25	.13	.14	-.04	-.17	.07	-.01	.27	.06	.15	.13	-.11	.03	.07	.09	.10	-.08	-.08	-.03
6							.31	.05	.01	.25	.16	.11	-.13	-.33	.23	.11	-.06	-.20	-.12	-.21	.00	-.17	-.12	-.11	-.20	.08	.09	-.05
7								.01	.11	.31	.01	.13	-.20	-.24	.16	.13	.01	-.06	-.01	-.07	.08	.11	-.16	-.13	-.06	-.04	-.11	-.06
8									-.20	-.30	.03	-.05	-.04	-.00	-.07	.01	.14	-.09	-.17	-.16	.11	-.06	-.13	-.18	-.07	-.12	.05	.03
9										.08	-.09	-.03	-.13	.01	-.27	.01	.07	.01	-.13	.03	.20	-.09	-.05	.01	-.11	-.07	-.14	-.05
10											.02	.08	-.03	-.09	-.24	-.01	.28	.17	.26	.32	.22	.17	.26	.18	.17	.34	.08	-.04
11												.43	.11	-.19	.07	.30	-.09	-.04	-.04	.08	.05	.18	.21	-.17	-.06	.04	-.16	-.08
12													.11	-.03	.13	.39	-.13	-.08	.13	.00	-.04	.03	.32	-.13	-.14	.01	-.19	-.14
13														.17	.14	.06	.11	.16	.18	.11	.15	.13	.18	.10	.32	.09	-.03	.05
14															-.16	.01	.03	.14	.04	.09	.01	.12	.06	.16	.14	.05	.08	.17
15																.12	.05	-.09	.01	-.06	.06	.02	.19	-.01	.19	.10	.01	.00
16																	-.10	-.01	-.17	-.19	-.07	-.02	-.30	-.23	-.26	-.23	-.20	-.33
17																		.56	.48	.43	.22	.30		.63	.66	.41	.45	.33
18																			.53	.52	.45	.51			.51	.46	.49	.48
19																				.43	.35	.55				.48	.47	.43
20																					.42	.31					.52	.23
21																						.54						.48
22																												

Table 2. Product-moment correlations between the predictor variables designated in Box 3 and the subject-object relations

	Personality variables																Micro-lesson 1, evaluation Subject-object relations						Micro-lesson 2, evaluation Subject-object relations					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	18	19	20	21	22	23
1		-.07	-.21	.29	-.01	.05	.06	-.23	.06	.01	-.08	-.17	-.35	.18	.14	-.01	-.05	-.02	-.07	.16	-.09	-.05	.22	.05	-.06	.10	.06	.12	.09
2			-.16	-.11	.06	.08	-.14	.05	-.28	.12	-.06	-.09	.10	.00	-.13	.01	.21	.26	-.09	-.13	-.10	-.05	-.03	.05	.02	-.22	.19	-.29	.11
3				-.04	.11	.13	-.05	.04	.13	.02	.43	.11	.16	-.09	.04	-.18	-.15	.01	.02	-.07	.12	-.04	-.06	-.11	-.09	-.05	.17	.02	-.12
4					-.01	.23	.03	-.07	.21	.10	-.15	.21	-.01	.16	.12	-.16	-.18	-.08	-.14	-.02	.05	.08	.15	-.13	-.14	-.01	.11	.08	.14
5						.03	.28	.01	.23	-.23	-.09	-.13	-.01	.20	.26	.06	.13	.11	.04	.21	.04	.08	.03	-.15	.02	.04	.07	-.00	.06
6							-.08	.15	.16	.10	.07	.23	.38	.16	-.19	.03	-.25	-.05	.05	.06	.11	-.10	.06	-.03	.12	.15	.09	.03	.01
7								-.08	.28	-.14	-.10	.18	.14	.25	.34	.17	-.01	-.05	.13	.31	-.03	.06	.16	.04	.06	.20	-.05	.15	.19
8									.11	.07	.15	.08	.14	.25	.22	.14	-.31	.16	.17	-.12	.17	.01	-.11	.15	.03	.05	.20	.01	-.13
9										.00	.01	.31	.15	.43	.59	.16	-.35	.03	.16	.07	.10	.01	.01	.04	-.03	.01	.06	.24	.08
10											-.02	-.26	-.21	-.01	-.05	.01	.07	.11	.04	-.05	.02	-.17	-.01	.05	.18	.01	-.08	-.15	-.12
11												.16	-.03	-.10	.06	-.28	-.22	.24	-.02	.13	.09	.10	-.05	.17	-.15	-.17	.13	.12	-.18
12													.39	.14	.21	-.00	-.34	.06	.01	-.06	.08	.11	-.08	-.04	-.25	-.10	.01	.15	.05
13														.18	.24	.07	-.14	-.02	.10	.08	.19	.01	-.12	-.04	.04	.07	.05	.02	-.01
14															.70	.34	-.12	.08	.13	.09	.10	-.10	-.15	.05	.08	.08	.09	.01	.09
15																.17	-.28	-.01	.14	.16	.15	.03	-.05	.08	.05	.05	.13	.11	.01
16																	-.01	-.13	.17	.03	.06	.11	.07	.04	.07	.10	.01	.09	.13
17																		-.04	.03	.07	-.15	-.04	-.01	.05	.18	.06	-.13	-.21	.16
18																			.23	.14	-.16	.06	.09		.21	.26	.02	-.12	.04
19																				.48	-.06	.08	.27			.40	-.07	-.15	.16
20																					-.06	.02	.13				.12	.03	.09
21																						.06	-.08					.33	-.31
22																							.17						-.16
23																													

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Abstract card

Bierschenk, B. Externally mediated self-confrontation: The influence of personality on the perception and evaluation of subject-object relations. Educational and Psychological Interactions (Malmö, Sweden: School of Education), No. 52, 1975.

This report presents an analysis of the influence of personality on the student teachers' perception and evaluation during confrontations with their own video-recorded micro-lessons. Using a number of multivariate data analysis models, a study was made in order to investigate prediction problems and the psychological content of the relations between different groups of variables. The student teachers' perception can best be predicted by means of personality variables that define an extroversion syndrome, social plasticity and child-centredness. The student teachers' evaluation can best be predicted by means of personality variables that define an emotionality syndrome and a sensitivity syndrome.

Indexed:
1. Self-confrontation
2. GCTV
3. Multiple regression analysis

Reference card

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